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PB-265 581

Kentucky Lake, Hardin, Decatur, Wayne, Perry, Benton Humphreys, Houston, Henry, & Stewart Counties, TN Calloway, Trigg, Marshall, Lyon & Livingston Counties, KY

National Eutrophication Survey, Las Vegas, Nev.

Prepared for

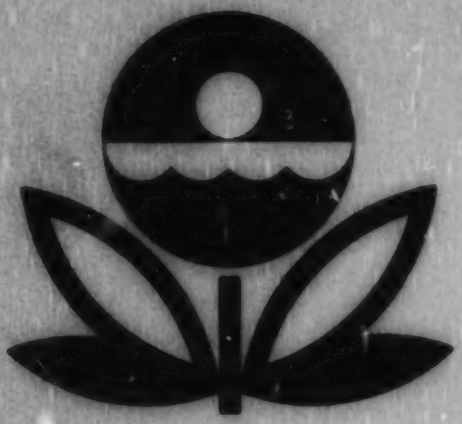
Environmental Monitoring and Support Lab, Las Vegas, Nev.

Oct 76

PB 265 581

U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL EUTROPHICATION SURVEY

WORKING PAPER SERIES



CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY - CORVALLIS, OREGON

and

ENVIRONMENTAL MONITORING & SUPPORT LABORATORY - LAS VEGAS, NEVADA

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TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1. REPORT NO.	2.	3. RECIPIENT'S ACCESSION NO.

4. TITLE AND SUBTITLE
Report on Kentucky Lake, Hardin, Decatur, Wayne, Perry, Benton, Humphreys, Houston, Henry, and Steward Counties TN & Colloway, Trigg, Marshall, Lyon, Livingston, KY

5. REPORT DATE
Prepared October 1976

6. PERFORMING ORGANIZATION CODE

7. AUTHOR(S)
Anonymous (National Eutrophication Survey Staff)

8. PERFORMING ORGANIZATION REPORT NO.
Working Paper No. 354

9. PERFORMING ORGANIZATION NAME AND ADDRESS
National Eutrophication Survey
U.S. Environmental Protection Agency
P.O. Box 15027
Las Vegas, NV 89114

10. PROGRAM ELEMENT NO.

11. CONTRACT/GRANT NO.

12. SPONSORING AGENCY NAME AND ADDRESS
Office of Research and Development
U.S. Environmental Protection Agency
401 M Street, S. W.
Washington, DC 20460

13. TYPE OF REPORT AND PERIOD COVERED
Final - 1973

14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES
Prepared in cooperation with the U.S. Environmental Protection Agency, Corvallis Environmental Research Laboratory, Eutrophication Survey Branch, Corvallis, OR 97330

16. ABSTRACT
Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
eutrophication lakes nutrients phosphorus nitrogen loading		05B 05C

18. DISTRIBUTION STATEMENT	19. SECURITY CLASS *(This Report)*	21. NO. OF PAGES
Release unlimited		103
	20. SECURITY CLASS *(This page)*	22. PRICE PC A06-MF A01

EPA Form 2220-1 (9-73)

REPORT
ON
KENTUCKY LAKE
HARDIN, DECATUR, WAYNE, PERRY, BENTON, HUMPHREYS, HOUSTON, HENRY, AND STEWART COUNTIES, TENNESSEE
CALLOWAY, TRIGG, MARSHALL, LYON, AND LIVINGSTON COUNTIES, KENTUCKY

EPA REGION IV

WORKING PAPER NO. 354

WITH THE COOPERATION OF THE

TENNESSEE DEPARTMENT OF PUBLIC HEALTH,

KENTUCKY DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION,

AND THE

TENNESSEE AND KENTUCKY NATIONAL GUARDS

OCTOBER 1976

REPORT ON KENTUCKY LAKE

HARDIN, DECATUR, WAYNE, PERRY, BENTON, HUMPHREYS,
HOUSTON, HENRY, AND STEWART COUNTIES, TENNESSEE

CALLOWAY, TRIGG, MARSHALL, LYON, AND LIVINGSTON COUNTIES, KENTUCKY

EPA REGION IV

by

National Eutrophication Survey

Water and Land Monitoring Branch
Monitoring Applications Laboratory
Environmental Monitoring & Support Laboratory
Las Vegas, Nevada

and

Eutrophication Survey Branch
Corvallis Environmental Research Laboratory
Corvallis, Oregon

Working Paper No. 354

OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY

October 1976

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to freshwater lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point source discharge reduction and nonpoint source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's freshwater lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by the U.S. Environmental Protection Agency and to augment plans implementation by the states.

ACKNOWLEDGMENTS

The staff of the National Eutrophication Survey (Office of Research and Development, U.S. Environmental Protection Agency) expresses sincere appreciation to the Tennessee Department of Public Health and the Kentucky Department of Natural Resources and Environmental Protection for professional involvement, to the Tennessee and Kentucky National Guards for conducting the tributary sampling phase of the Survey, and to those Tennessee wastewater treatment plant operators who provided effluent samples and flow data.

The staff of the Division of Water Quality Control, Tennessee Department of Public Health; the Division of Environmental Planning, Tennessee Valley Authority; the Nashville District Corps of Engineers; and the Kentucky Department of Natural Resources and Environmental Protection provided invaluable lake documentation and counsel during the Survey, reviewed the preliminary reports and provided critiques most useful in the preparation of this Working Paper series.

Major General William C. Smith, former Adjutant General of Tennessee, and Project Officer Colonel Wilburn C. Johnson, who directed the volunteer efforts of the Tennessee National Guardsmen; Major General Richard L. Frymire, and Project Officers Lt. Colonel Thomas Buyher, Jr. and Lt. Colonel David B. May, who directed the volunteer efforts of the Kentucky National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF TENNESSEE

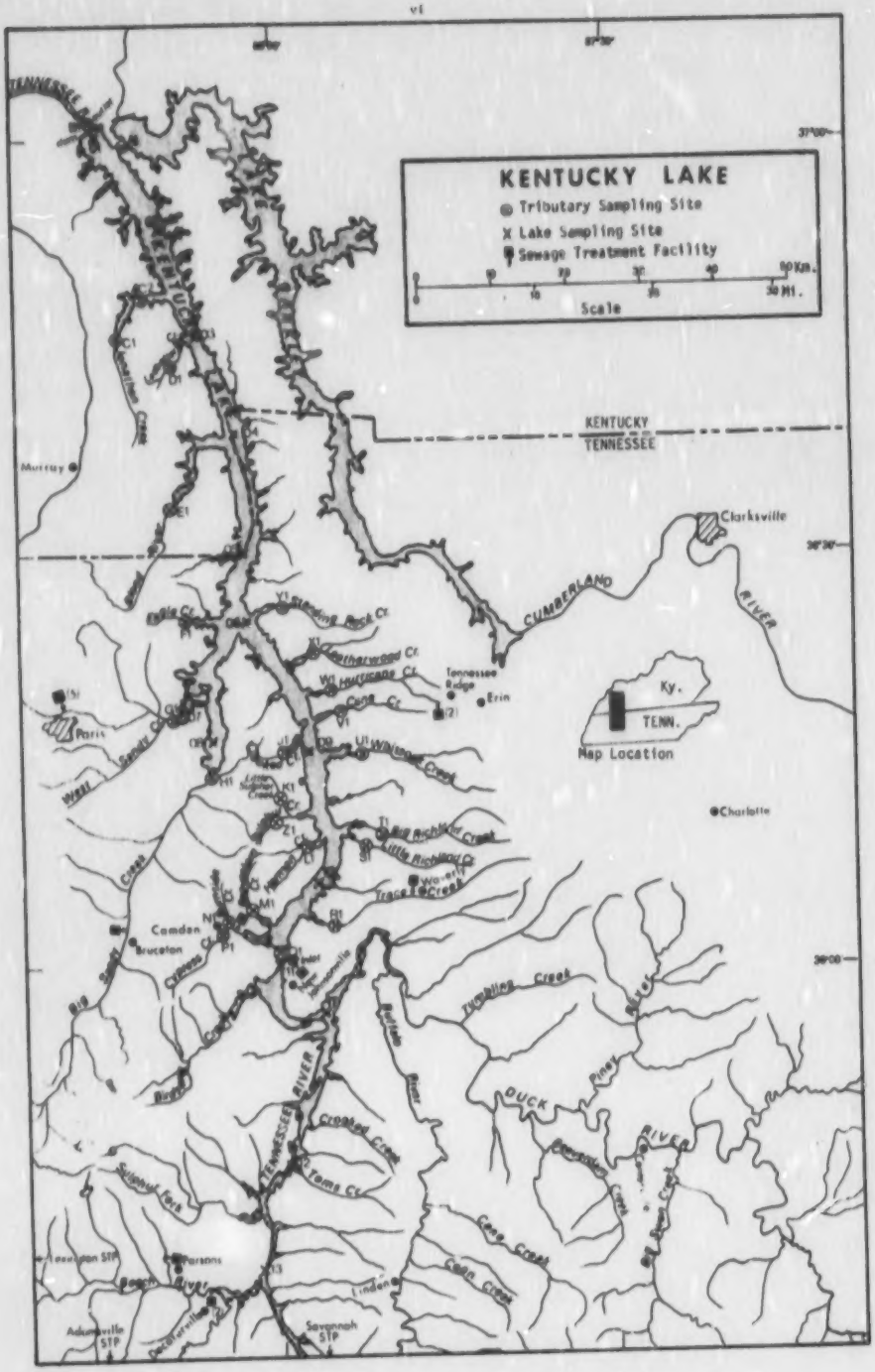
LAKE NAME	COUNTY
Barkley	Stewart, Montgomery (Trigg, Lyon in KY)
Boone	Washington, Sullivan, Carter
Cheatham	Cheatham, Davidson
Cherokee	Jefferson, Hamblen, Grainger, Hawkins
Chickamauga	Hamilton, Rhea, Meigs, McMinn
Douglas	Sevier, Jefferson, Cocke
Fort Loudon	Loudon, Knox, Blount
Great Falls	White, Van Buren
Nickajack	Marion, Hamilton
Old Hickory	Sumner, Davidson, Wilson, Smith, Trousdale
Percy Priest	Davidson, Rutherford
Reelfoot	Obion
South Holston	Sullivan (Washington in VA)
Tims Ford	Moore, Franklin
Watts Bar	Rhea, Meigs, Cumberland, Roane, Loudon
Woods (Elk River)	Franklin, Coffee

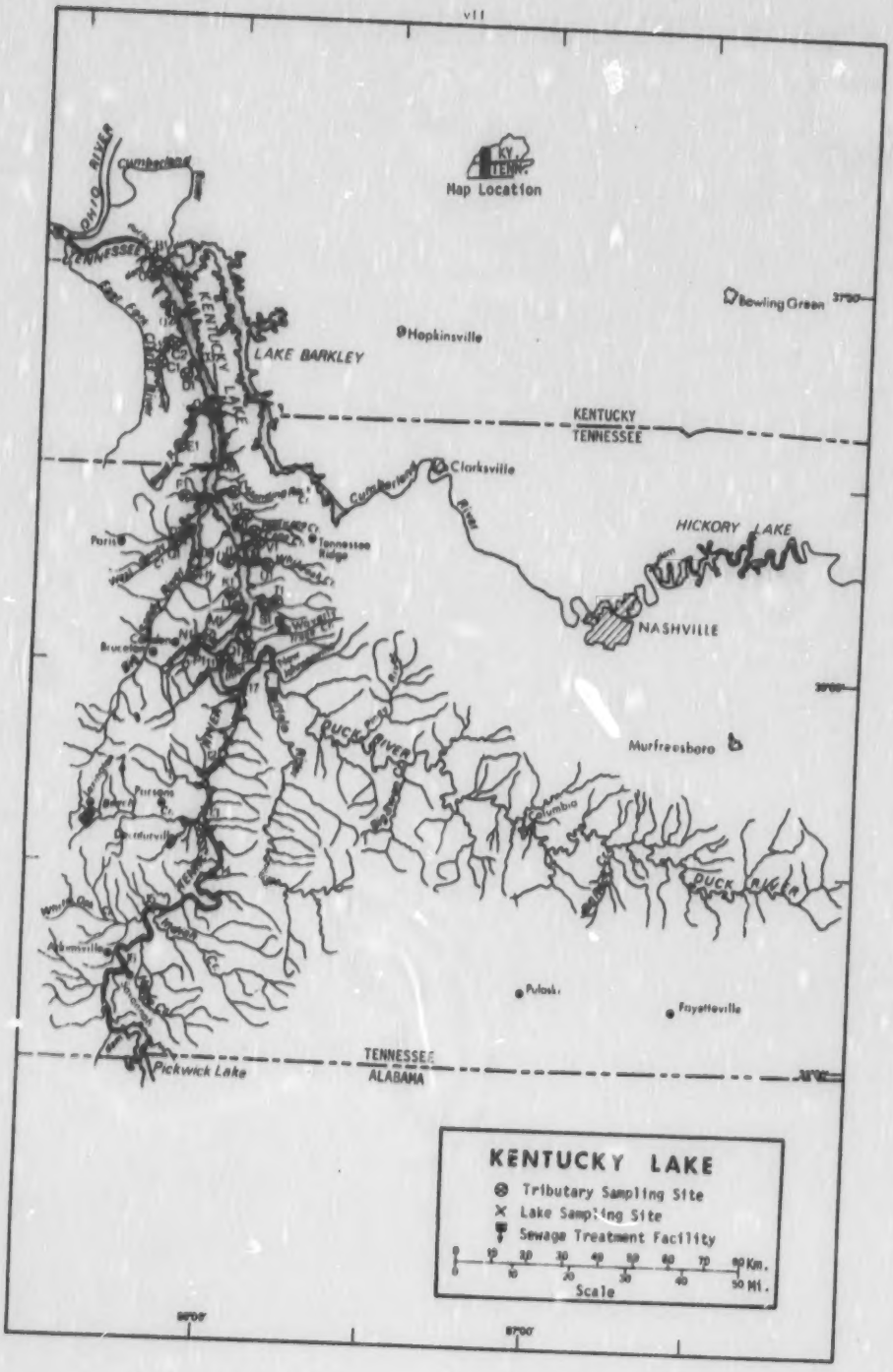
NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF KENTUCKY

LAKE NAME	COUNTY
Barren River Reservoir	Allen, Barren
Lake Cumberland	Pulaski, McCreary, Russell, Wayne, Clinton
Dale Hollow Reservoir	Cumberland, Clinton (Clay, Pickett, Overton in TN)
Herrington Lake	Boyle, Mercer, Garrard
Kentucky Lake	Marshall, Lyon, Trigg, Livingston, Calloway (Hardin, Decatur, Wayne, Perry, Benton, Humphreys, Houston, Henry, and Stewart in TN)


KENTUCKY LAKE
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
Scale
KENTUCKY
TENNESSEE
Murray
Clarksville
CUMBERLAND
RIVER
Paris
Ky.
TENN.
Map Location
Charlotte
Tennessee Ridge
Erin
Camden
Bruceton
Big Sandy
Trace Creek
Little Richland Creek
Big Richland Creek
Duck River
Tennessee River
Parsons
Linden
Savannah STP
Adamsville STP
Lexington STP


Map Location
KY.
TENN.
OHIO RIVER
Cumberland
TENNESSEE
East Fork Clarks River
KENTUCKY LAKE
LAKE BARKLEY
Hopkinsville
Bowling Green
KENTUCKY
TENNESSEE
Clarksville
Cumberland River
HICKORY LAKE
Paris
Tennessee Ridge
NASHVILLE
Murfreesboro
DUCK RIVER
Columbia
Pulaski
Fayetteville
TENNESSEE
ALABAMA
Pickwick Lake
KENTUCKY LAKE
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
Km.
Mi.
Scale

REPORT ON KENTUCKY LAKE, TENNESSEE AND KENTUCKY

STORET NO. 2104

I. CONCLUSIONS

A. Trophic Condition:

Kentucky Lake is classified as eutrophic, i.e., nutrient rich and highly productive, on the basis of field observations and Survey data. Whether such nutrient enrichment is to be considered beneficial or deleterious is determined by its actual or potential impact upon designated beneficial water uses of each lake.

Chlorophyll a values ranged from 1.4 µg/l in the spring to 38.7 µg/l in the fall, with a mean of 9.1 µg/l. Potentials for primary production as measured by algal assay control yields were high at all stations. Of the 16 Tennessee lakes sampled, only three had higher median total phosphorus levels (0.072 mg/l), four had higher median inorganic nitrogen values (0.520 mg/l), and three had higher median orthophosphorus levels (0.030 mg/l) than Kentucky Lake. Only one lake in Kentucky sampled in 1973 had higher median nutrient levels than Kentucky Lake.

Survey limnologists reported high algal concentrations at Stations 8-13 and 17 during the May sampling round.

B. Rate-Limiting Nutrient:

Algal assay results indicate that Kentucky Lake was limited by available phosphorus at sampling Stations 6-16 and colimited by both phosphorus and nitrogen at Stations 1-5. In all assays, simultaneously added spikes of the nutrients resulted in maximum growth response. Mean inorganic nitrogen to orthophosphorus (N/P) ratios in sampled waters suggest phosphorus limitation in the spring (ranging from 16/1 to 53/1) but nitrogen or dual limitation in the summer and fall (ratios from 6/1 to 13/1). The persistent low water transparency probably exerts greater control over primary production in Kentucky Lake than do the nutrients. The chlorophyll a values noted are low relative to what one would expect based upon the high algal assay control yields, suggesting light limitations in the natural system.

C. Nutrient Controllability:

1. Point sources -

During the sampling year, the mean annual contribution from known point sources was estimated to be about 1.0% of the total loading reaching Kentucky Lake. The city of Paris contributed a total of about 0.4% from four wastewater treatment plants, and the city of Savannah contributed 0.2%. Total elimination of measured point sources impacting Kentucky Lake would not be expected to alter the trophic state of the lake.

There are also a number of additional sewage treatment plants in the Kentucky Lake drainage basin which did not participate in the Survey and are not included in the nutrient budget for the lake. These include: Tennessee River Pulp and Paper (Counce), Pickwick Landing State Park STP, the Henderson County schools (at Beaver, Scotts Hill, Sardis, Southhaven, and Pin Oak), the Riverside school, Paris Landing State Park STP, Lakeshore Methodist Assembly (Eva), H.I.S. Sportswear (Bruceton), Scotts Hill Sportswear, two I-40 Rest Areas, and a number of other industrial sources (Tennessee Department of Public Health, 1976). Although the above discharges are all minor, it is not known at this time whether their combined nutrient impact is of consequence to the nutrient budget of the lake.

Loading calculations for Kentucky Lake yield a net loss of phosphorus. This export is probably due to a peculiar situation concerning the Duck River drainage system (see map, page vii).

There was a gradual increase in phosphorus concentration from the tailwater of Pickwick Dam to the Kentucky Lake Dam with a large increase just downstream from the Duck River outlet. This same trend was observed by Byre (1970) who

attributed the increase to the fact that "the Duck River receives the waste discharges from the second largest phosphate mining and processing complex in the United States." In addition to mining discharges, the Duck River contributes substantial nonpoint phosphorus loading as a result of runoff from drainage areas geologically rich in phosphate mineral nutrients (S. Fishel, personal communication).

The lake sampling site (No. 11) immediately downstream from the Duck River embayment shows a substantial increase in total phosphorus concentration with depth. The lake inlet station [tributary site Q(1) just downstream from the Duck River outlet] did not reflect this increase; however, this sample was limited to the upper portion of the water column. Apparently, the tributary sampling at this station [Q(1)] underestimated the nutrient loading for the inlet.

It would be expected that this abnormality in the inlet sampling would be compensated for when nutrient loadings were measured at the outlet. However, Tennessee Valley Authority officials indicate that the intake for power production was 9 to 18 meters below the lake surface. Therefore, the water sampled below the dam [station B(1)] was water from the hypolimnion which was higher in nutrients than would be expected if the entire water column were sampled. For example, the

mean total phosphorus concentration at tributary station B(1) was 0.087 mg/liter compared to 0.075 mg/liter for the lake sample at Station 1 near the Kentucky Lake Dam. This difference in concentration resulted in a higher phosphorus export than was accounted for under the sampling procedures of the lake watershed.

Additional tributary sampling and an intensive study of the impact of the phosphate mining operation on the Duck River watershed would aid in determining a nutrient budget for Kentucky Lake.

2. Nonpoint sources -

The mean annual contribution not attributable to nearby point sources accounted for about 98.9% of the total phosphorus load. The Tennessee River contributed 95.7% of the total load, and ungaged tributaries were estimated to contribute 0.1%. Included in this Tennessee River phosphorus contribution is loading from the unmeasured Duck River drainage basin and numerous upstream Tennessee River impoundments throughout Alabama and eastern Tennessee.

An evaluation of the nutrient control requirements for the upstream sources within the Tennessee River watershed is needed in the future. As inorganic nutrients appear to be present in excess of primary production requirements, substantial

reduction in nutrients would be necessary to effect demonstrable ambient water quality improvement.

II. LAKE AND DRAINAGE BASIN CHARACTERISTICS

Lake and drainage basin characteristics are itemized below. Lake morphometry data and mean hydraulic retention time were provided by the Tennessee Valley Authority. Tributary flow data were provided by the Tennessee and Kentucky District Offices of the U.S. Geological Survey (USGS). Tributary drainage areas plus the lake surface area do not equal the outlet drainage area (probably) because of differences in the pool elevation used by the different sources in their calculations. Precipitation values are estimated by methods as outlined in National Eutrophication Survey (NES) Working Paper No. 175 (1975). A table of metric/English conversions is included as Appendix A.

A. Lake Morphometry:

1. Surface area: 648.71 km^2.
2. Mean depth: 5.2 meters.
3. Maximum depth: 26.9 meters.
4. Volume: 7,560.120 x 10^6 m^3.
5. Mean hydraulic retention time: 22 days.

B. Tributary and Outlet (see Appendix B for flow data):

1. Tributaries -

Name	Drainage area(km^2)	Mean flow (m^3/sec)
C(2) Jonathan Creek	172.5	2.52
D(1) Ledbetter Creek (Leather Creek)	9.2	0.13
E(1) Blood River	336.7	4.93
F(1) Eagle Creek	32.4	0.47
G(1) West Sandy Creek	391.1	5.72
H(1) Big Sandy River	1,629.1	23.84
J(1) Crooked Creek	36.5	0.53
K(1) Little Sulphur Creek	29.3	0.43
L(1) Harmon Creek	45.6	0.67
M(1) Beaverdam Creek	19.3	0.28
N(1) Burnside Creek	15.2	0.22
P(1) Cypress Creek	194.5	2.85
Q(1) Tennessee River at New Johnsonville*	99,116.6	1,731.10
R(1) Trace Creek	99.2	1.45
S(1) Little Richland Creek	46.6	0.68
T(1) Big Richland Creek	197.1	2.88
U(1) Whiteoak Creek	290.1	4.24
V(1) Cane Creek	22.3	0.33
W(1) Hurricane Creek	66.0	0.97
X(1) Leatherwood Creek	75.6	1.11
Y(1) Standing Rock Creek	74.1	1.08
Z(1) Sulfur Creek	10.1	0.15
Minor tributaries and immediate drainage	505.0	6.87
Totals	103,414.1	1,793.45

2. Outlets -

A(1) Barkley Canal		164.77
B(1) Tennessee River	104,117.9	1,696.34
Totals	104,117.9	1,861.11

C. Precipitation:

1. Year of sampling: 170.5 centimeters.
2. Mean annual: 117.6 centimeters.

*Station includes drainage area of the unsampled Duck River.

III. LAKE WATER QUALITY SUMMARY

Kentucky Lake was sampled three times during the open-water season of 1973 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from 17 stations on the lake (sites 01, 03, 05, 07, 08, and 17 were sampled all three sampling rounds; sites 02, 04, 06, and 10 were sampled during spring and summer only; sites 09, 13, and 15 were sampled during spring and fall; sites 11, 12, 14, and 16 were sampled during spring only) and from a number of depths at each station (see maps). During each visit, depth-integrated samples were collected from each station for chlorophyll a analysis and phytoplankton identification and enumeration. During the first visit, 18.9-liter depth-integrated samples were composited for algal assays. Maximum depths sampled were as follows:

Station Number	Maximum Depth (meters)
1	21.0
2	11.0
3	19.8
4	19.2
5	18.0
6	18.6
7	3.7
8	5.8
9	20.4
10	14.9
11	16.2
12	15.8
13	14.9
14	11.3
15	11.3
16	11.3
17	13.7

For a more detailed explanation of NES methods, see NES Working Paper No. 175.

The results obtained are presented in full in Appendix C and are summarized in III-A for waters at the surface and at the maximum depth for each site. Results of the phytoplankton counts and chlorophyll a determinations are included in III-B. Results of the limiting nutrient study are presented in III-C.

NTUCKY LAKE
STORET CODE 2104

A. SUMMARY OF PHYSICAL AND CHEMICAL CHARACTERISTICS FOR KENTUCKY LAKE

PARAMETER	(5/15/73) S*** = 17 N*	RANGE	MEDIAN	MAX DEPTH RANGE (METERS)	(8/13/73) S*** = 10 N*	RANGE	MEDIAN	MAX DEPTH RANGE (METERS)	(10/20/73) S*** = 9 N*	RANGE	MEDIAN	MAX DEPTH RANGE (METERS)
TEMPERATURE (DEG CENT)												
0.-1.5 M DEPTH	17	17.7- 20.4	19.9	0.0- 0.0	14	27.2- 29.6	29.2	0.0- 1.5	17	15.8- 22.2	21.4	0.0- 1.5
MAX DEPTH**	17	17.2- 20.1	19.8	4.3- 19.2	10	26.3- 29.4	28.9	2.4- 19.8	9	15.7- 22.0	21.3	1.5- 18.9
DISSOLVED OXYGEN (MG/L)												
0.-1.5 M DEPTH	0	***** *****	*****	***** *****	9	6.0- 17.6	6.8	0.0- 1.5	9	7.4- 9.8	7.8	0.0- 1.5
MAX DEPTH**	17	4.2- 10.6	8.2	4.3- 19.2	10	5.2- 12.0	6.4	2.4- 19.8	9	6.8- 9.4	7.4	1.5- 18.9
CONDUCTIVITY (UMHOS)												
0.-1.5 M DEPTH	17	55.- 190.	150.	0.0- 0.0	14	80.- 176.	170.	0.0- 1.5	17	40.- 160.	146.	0.0- 1.5
MAX DEPTH**	17	55.- 168.	150.	4.3- 19.2	10	73.- 176.	169.	2.4- 19.8	9	39.- 160.	146.	1.5- 18.9
PH (STANDARD UNITS)												
0.-1.5 M DEPTH	17	6.7- 8.0	7.7	0.0- 0.0	14	7.0- 7.9	7.4	0.0- 1.5	18	7.4- 8.6	7.6	0.0- 1.5
MAX DEPTH**	17	7.4- 7.9	7.7	4.3- 19.2	10	7.0- 7.8	7.5	2.4- 19.8	9	7.3- 7.8	7.4	1.5- 18.9
TOTAL ALKALINITY (MG/L)												
0.-1.5 M DEPTH	17	16.- 61.	54.	0.0- 0.0	14	20.- 59.	56.	0.0- 1.5	18	12.- 64.	57.	0.0- 1.5
MAX DEPTH**	17	16.- 61.	54.	4.3- 19.2	10	20.- 60.	56.	2.4- 19.8	9	12.- 65.	59.	1.5- 18.9
TOTAL P (MG/L)												
0.-1.5 M DEPTH	17	0.046-0.110	0.068	0.0- 0.0	14	0.046-0.083	0.073	0.0- 1.5	18	0.055-0.095	0.079	0.0- 1.5
MAX DEPTH**	17	0.050-0.260	0.079	4.3- 19.2	10	0.044-0.112	0.072	2.4- 19.8	9	0.058-0.113	0.082	1.5- 18.9
DISSOLVED ORTHO P (MG/L)												
0.-1.5 M DEPTH	17	0.007-0.038	0.030	0.0- 0.0	14	0.007-0.041	0.028	0.0- 1.5	18	0.010-0.049	0.041	0.0- 1.5
MAX DEPTH**	17	0.006-0.035	0.029	4.3- 19.2	10	0.007-0.037	0.024	2.4- 19.8	9	0.010-0.047	0.040	1.5- 18.9
NO2+NO3 (MG/L)												
0.-1.5 M DEPTH	17	0.080-0.550	0.510	0.0- 0.0	14	0.110-0.330	0.185	0.0- 1.5	18	0.030-0.470	0.360	0.0- 1.5
MAX DEPTH**	17	0.090-0.550	0.510	4.3- 19.2	10	0.090-0.330	0.190	2.4- 19.8	9	0.040-0.460	0.360	1.5- 18.9
AMMONIA (MG/L)												
0.-1.5 M DEPTH	17	0.060-0.130	0.080	0.0- 0.0	14	0.070-0.140	0.090	0.0- 1.5	18	0.030-0.070	0.050	0.0- 1.5
MAX DEPTH**	17	0.060-0.900	0.080	4.3- 19.2	10	0.060-0.180	0.090	2.4- 19.8	9	0.040-0.070	0.050	1.5- 18.9
KJELDAHL N (MG/L)												
0.-1.5 M DEPTH	17	0.200-0.800	0.400	0.0- 0.0	14	0.300-1.200	0.600	0.0- 1.5	18	0.200-1.000	0.350	0.0- 1.5
MAX DEPTH**	17	0.200-0.400	0.300	4.3- 19.2	10	0.200-0.400	0.500	2.4- 19.8	9	0.200-1.000	0.200	1.5- 18.9
SECCHI DISC (METERS)												
	17	0.5- 1.2	0.9		10	0.5- 1.7	1.1		9	0.5- 1.9	0.9	

* N = NO. OF SAMPLES
** MAXIMUM DEPTH SAMPLED AT EACH SITE
*** S = NO. OF SITES SAMPLED ON THIS DATE

B. Biological Characteristics:

1. Phytoplankton -

Sampling Date	Dominant Genera		Algal Units per ml
05/15/73 (Sites 01-10)	1.	Melosira	4,877
	2.	Flagellates*	2,418
	3.	Stephanodiscus	551
	4.	Pennate diatom	112
	5.	Mallomonas	112
		Other genera	288
		Total	8,358
05/15/73 (Sites 11-17)	1.	Melosira	1,099
	2.	Flagellates*	1,089
	3.	Stephanodiscus	149
	4.	Nitzschia	117
	5.	Pennate diatom	53
		Other genera	108
		Total	2,615
08/13/73	1.	Melosira	2,033
	2.	Flagellates*	913
	3.	Oscillatoria	884
	4.	Lyngbya	766
	5.	Stephanodiscus	295
		Other genera	1,090
		Total	5,981
10/20/73	1.	Oscillatoria	2,943
	2.	Melosira	1,237
	3.	Flagellates*	853
	4.	Nitzschia	853
	5.	Anabaena	640
		Other genera	1,238
		Total	7,764

*Includes all flagellated genera.

2. Chlorophyll *a* -

Sampling Date	Station Number	Chlorophyll *a* (µg/liter)
05/15/73	1	5.9
	2	---
	3	6.8
	4	5.4
	5	4.5
	6	5.7
	7	27.8*
	8	12.7
	9	9.1
	10	10.1
	11	5.7
	12	4.4
	13	3.5
	14	1.7
	15	1.6
	16	1.4
	17	5.1
08/13/73	1	11.0
	2	15.6
	3	9.3
	4	7.6
	5	13.5
	6	5.3
	7	25.0*
	8	19.4
	10	4.4
	17	7.0
10/20/73	1	4.7
	3	6.9
	5	5.1
	7	38.7*
	8	21.0
	9	3.1
	13	1.4
	15	2.3
	17	5.4

*It should be noted that Station 7 is shallow and located just downstream from the five Paris sewage treatment plants.

C. Limiting Nutrient Study:

1. Autoclaved, filtered, and nutrient spiked -

Site Nos.	Spike(mg/l)	Ortho P Conc.(mg/l)	Inorganic N Conc.(mg/l)	Maximum yield (mg/l-dry wt.)
01, 02, 03	Control	0.032	0.488	6.9
	0.05 P	0.082	0.488	7.0
	0.05 P + 1.0 N	0.082	1.488	13.9
	1.00 N	0.032	1.488	6.5
04, 05	Control	0.028	0.498	5.6
	0.05 P	0.078	0.498	6.4
	0.05 P + 1.0 N	0.078	1.498	17.5
	1.00 N	0.028	1.498	6.4
06, 07, 08, 09	Control	0.024	0.428	5.4
	0.05 P	0.074	0.428	7.6
	0.05 P + 1.0 N	0.074	1.428	21.6
	1.00 N	0.024	1.428	5.6
10, 11, 12, 13	Control	0.050	0.530	6.0
	0.05 P	0.100	0.530	13.9
	0.05 P + 1.0 N	0.100	1.530	21.1
	1.00 N	0.050	1.530	5.0
14, 15, 16	Control	0.028	0.564	8.4
	0.05 P	0.078	0.564	16.7
	0.05 P + 1.0 N	0.078	1.564	22.5
	1.00 N	0.028	1.564	8.2

2. Discussion -

The control yields of the algal assay, Selenastrum capricornutum, indicate that the potential for primary production in Kentucky Lake was high at the time of spring sampling. In the assays for Station 1-5, no significant growth response was noted with the addition of either nitrogen or phosphorus alone, but was observed with the simultaneous addition of both nutrients, suggesting colimitation by nitrogen and phosphorus. In assays for lake Stations 6-16, increases in yield with the addition of phosphorus suggest phosphorus limitation.

The N/P ratios in the field data ranged from 16/1 to 53/1 in the spring samples, suggesting phosphorus limitation, but from 6/1 to 13/1 during summer and fall samplings, indicating nitrogen or dual limitation at those times.

The Tennessee Department of Public Health (S. Fishel, personal communication) indicates that the Kentucky Lake river system contains an excess of phosphorus and that nutrient is generally not considered to be growth limiting in the reservoir. He states that the major limiting factors in Kentucky Lake are
1) the short retention time of this mainstem impoundment,
2) background water turbidity from colloidal particles, and
3) availability of nitrogen (limiting to green algae in the late summer).

IV. NUTRIENT LOADINGS
(See Appendix D for data)

For the determination of nutrient loadings, the Tennessee and Kentucky National Guards collected monthly near-surface grab samples from each of the tributary sites indicated on the maps (pages vi and vii), except for the high runoff months of February and July when two samples were collected. Sampling was begun in March 1973, and was completed in March 1974.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the Tennessee and Kentucky District Offices of the USGS for the tributary sites nearest the lake.

In this report, nutrient loads for sampled tributaries were determined by using a modification of the USGS computer program for calculating stream loadings. Nutrient loads indicated for tributaries are those measured minus known point source loads, if any. Nutrient loading estimates for Barkley Canal [Station A(1)] were derived by multiplying the mean normalized flow by the mean annual concentration. The mean annual concentration was obtained from the values observed at Station 2401A1 (Kentucky Lake) and Station 4701V1 (Barkley Lake). Concentrations for each sampling date are shown in Appendix D.

Although the lake samples included sites (11, 12, 13, 14, 15, 16, and 17) above New Johnsonville [tributary site Q(1)], the most representative loading estimates were obtained when site Q(1) was considered Kentucky Lake inlet. For example, when Pickwick Dam was considered the inlet, a very large imbalance in total phosphorus was seen. This is believed to be due to the influence of the unsampled and therefore unmeasured loading of the Duck River drainage system (see map, page vii). Evidence of this Duck River impact is seen from comparisons of the mean total phosphorus values of the three lake sampling sites immediately downstream from the Duck River embayment (mean total phosphorus = 0.082 mg/l) with the three sampling sites immediately upstream from the embayment (mean total phosphorus = 0.056 mg/l).

Nutrient loadings for unsampled "minor tributaries and immediate drainage" ("ZZ" of USGS) were estimated by using the mean annual nutrient loads, in $kg/km^2/yr$, for Ledbetter Creek, Eagle Creek, Crooked Creek, Beaverdam Creek, Burnside Creek, Little Richland Creek, Big Richland Creek, Whiteoak Creek, Cane Creek, Leatherwood Creek, and Standing Rock Creek at Stations D(1), F(1), J(1), M(1), N(1), S(1), T(1), U(1), V(1), X(1), and Y(1), and by multiplying the means by the ZZ area in km^2.

The operators of the Waverly, Paris (four plants), New Johnsonville, Bruceton, and Parsons wastewater treatment plants provided monthly effluent samples and corresponding flow data. Nutrient loads for the cities of Paris (Celotex), Tennessee Ridge (two plants), Camden, Savannah, Adamsville, Decatursville (two plants), and Lexington wastewater treatment plants were estimated at 1.134 kg P and 3.401 kg N/capita/yr.

A. Waste Sources:

1. Known municipal -

Name	Population Served†	Treatment†	Mean Flow ($m^3/d \times 10^3$)	Receiving Water
Waverly	3,780	1.	1.824	Trace Creek
Paris (Main)	5,700	1.	5.678	Town Creek/Bailey Fork Creek/ Holly Fork Creek/West Sandy Creek
Paris Lagoon #2	3,700	2.	2.226	Bailey Fork Creek/West Sandy Creek
Paris Lagoon #3* (Emerson Electric)	94	2.	0.174	Clifty Creek/West Sandy Creek
Paris (Celotex)*	300	2.	0.114**	Bailey Fork Creek/West Sandy Creek
Paris Lagoon #5	900	2.	0.242	Bailey Fork Creek/West Sandy Creek
New Johnsonville	1,200	2.	0.678	North Indian Creek
Bruceton	1,500	2.	1.045	Cherry Creek/Big Sandy River
Parsons	1,523	3.	1.382	Bear Creek/Beech River
Tennessee Ridge #1	100	2.	0.038**	South Fork Hurricane Creek
Tennessee Ridge #2	200	2.	0.076**	Cane Creek
Camden	1,145	3.	0.433**	Cane Creek/Cypress Creek
Savannah's #1-#4	6,000***	2.	2.271**	Horse Creek
Adamsville	1,400	2.	0.530**	Dollar Creek/Beason Creek
Decatursville #1	75	2.	0.028**	Rushing Creek
Decatursville #2	435	2.	0.165**	Rushing Creek
Lexington #1-#3	4,790***	2.	1.813**	Beech River

2. Known industrial - See footnote *.

Key: 1. Activated sludge
2. Stabilization pond
3. Trickling filter

†Sewage treatment plant questionnaires and/or Tennessee Department of Public Health, 1976.
*Plants have portion of waste load contributed by industry. The Celotex plant manufactures pressboard paneling, and the Paris #3 plant receives effluent from the manufacture of power saws.
**Estimated at 0.3785 m^3/capita/day.
***Total populations served by four and three stabilization ponds, respectively.

B. Annual Total Phosphorus Loading Average Year:

1. Inputs -

Source	kg P/yr	% of total
a. Tributaries (nonpoint load) -		
C(2) Jonathan Creek	6,585	0.1
D(1) Ledbetter Creek (Leather Creek)	105	<0.1
E(1) Blood River	20,510	0.5
F(1) Eagle Creek	635	<0.1
G(1) West Sandy Creek	6,650	0.1
H(1) Big Sandy River	75,565	1.6
J(1) Crooked Creek	140	<0.1
K(1) Little Sulfur Creek	110	<0.1
L(1) Harmon Creek	180	<0.1
M(1) Beaverdam Creek	90	<0.1
N(1) Burnside Creek	140	<0.1
P(1) Cypress Creek	26,265	0.6
Q(1) Tennessee River at New Johnsonville	4,395,865	95.6
R(1) Trace Creek	3,610	0.1
S(1) Little Richland Creek	310	<0.1
T(1) Big Richland Creek	1,170	<0.1
U(1) Whiteoak Creek	2,250	0.1
V(1) Cane Creek	190	<0.1
W(1) Hurricane Creek	195	<0.1
X(1) Leatherwood Creek	425	<0.1
Y(1) Standing Rock Creek	775	<0.1
Z(1) Sulfur Creek	40	<0.1
b. Minor tributaries and immediate drainage (nonpoint load) -	4,040	0.1
c. Known municipal STP's -		
Waverly	3,270	0.1
Paris Main	6,350	0.1
Paris Lagoon #2	4,545	0.1
Paris Lagoon #3	3,230	0.1
Paris Celotex	340	<0.1
Paris Lagoon #5	590	<0.1
New Johnsonville	1,120	<0.1
Bruceton	1,635	<0.1
Parsons	2,710	0.1
Tennessee Ridge #1	115	<0.1
Tennessee Ridge #2	225	<0.1
Camden	1,300	<0.1
Savannah(s) #1-#4	6,805	0.2
Adamsville	1,590	<0.1
Decatursville #1	85	<0.1
Decatursville #2	495	<0.1
Lexington #1-#3	5,430	0.1
d. Septic tanks* -	300	<0.1
e. Known industrial†		
f. Direct precipitation** -	11,350	0.3
Totals	4,597,330	100.0

2. Outputs -

A(1) Barkley Canal	519,620
B(1) Tennessee River	4,709,110
Total	5,228,730

3. Net annual P export†† 631,400

*Estimate based on 734 lakeshore residences, 17 camps, 20 resorts, 3 parks.
**Estimated (see NES Working Paper No. 175).
†Industrial wastes included with domestic wastes.
††Export probably due to unknown sources and/or sampling error.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	kg N/yr	% of total
a. Tributaries (nonpoint load) -		
C(2) Jonathan Creek	64,140	0.1
D(1) Ledbetter Creek (Leather Creek)	5,595	<0.1
E(1) Blood River	255,250	0.4
F(1) Eagle Creek	8,210	<0.1
G(1) West Sandy Creek	138,585	0.2
H(1) Big Sandy River	812,955	1.1
J(1) Crooked Creek	8,630	<0.1
K(1) Little Sulfur Creek	3,620	<0.1
L(1) Harmon Creek	17,350	<0.1
M(1) Beaverdam Creek	5,075	<0.1
N(1) Burnside Creek	5,640	<0.1
P(1) Cypress Creek	113,695	0.2
Q(1) Tennessee River at New Johnsonville	70,634,800	96.0
R(1) Trace Creek	37,270	0.1
S(1) Little Richland Creek	13,795	<0.1
T(1) Big Richland Creek	57,640	0.1
U(1) Whiteoak Creek	63,030	0.1
V(1) Cane Creek	5,955	<0.1
W(1) Hurricane Creek	15,720	<0.1
X(1) Leatherwood Creek	30,280	<0.1
Y(1) Standing Rock Creek	40,135	0.1
Z(1) Sulfur Creek	2,865	<0.1
b. Minor tributaries and immediate drainage (nonpoint load) -	171,700	0.2
c. Known municipal STP's -		
Waverly	4,320	<0.1
Paris Main	27,420	<0.1
Paris Lagoon #2	8,895	<0.1
Paris Lagoon #3	650	<0.1
Paris Celotex	1,020	<0.1
Paris Lagoon #5	1,080	<0.1
New Johnsonville	1,750	<0.1
Bruceton	3,675	<0.1
Parsons	4,360	<0.1
Tennessee Ridge #1	340	<0.1
Tennessee Ridge #2	680	<0.1
Camden	3,895	<0.1
Savannah(s) #1-#4	20,405	<0.1
Adamsville	4,760	<0.1
Decatursville #1	255	<0.1
Decatursville #2	1,480	<0.1
Lexington #1-#3	16,290	<0.1
d. Septic tanks* -	11,255	<0.1
e. Known industrial** -		
f. Direct precipitation*** -	700,345	1.0
Totals	73,324,810	100.0

2. Outputs -

A(1) Barkley Canal	6,365,330
B(1) Tennessee River	64,845,090
Total	71,210,420

3. Net annual N accumulation - 2,114,390

*Estimate based on 734 lakeshore residences, 17 camps, 20 resorts, 3 parks.
**Industrial wastes included with domestic wastes.
***Estimated (see NES Working Paper No. 175).

D. Mean Annual Nonpoint Nutrient Export by Subdrainage Area:

Tributary	kg P/km^2/yr	kg N/km^2/yr
C(2) Jonathan Creek	38	372
D(1) Ledbetter Creek (Leather Creek)	11	608
E(1) Blood River	61*	758
F(1) Eagle Creek	20	253
G(1) West Sandy Creek	17	354
H(1) Big Sandy River	46	499
J(1) Crooked Creek	4	237
K(1) Little Sulfur Creek	4	124
L(1) Harmon Creek	4	380
M(1) Beaverdam Creek	5	263
N(1) Burnside Creek	9	371
P(1) Cypress Creek	135*	585
Q(1) Tennessee River	44	713
R(1) Trace Creek	36	376
S(1) Little Richland Creek	7	296
T(1) Big Richland Creek	6	292
U(1) Whiteoak Creek	8	217
V(1) Cane Creek	8	267
W(1) Hurricane Creek	3	238
X(1) Leatherwood Creek	6	400
Y(1) Standing Rock Creek	10	542
Z(1) Sulfur Creek	4	284

*Background levels for these tributaries probably inflated by unknown point sources upstream.

E. Yearly Loadings:

In the following table, the existing phosphorus annual loading is compared to the relationship proposed by Vollenweider (1975). Essentially, his "eutrophic" loading is that at which the receiving waters would become eutrophic or remain eutrophic; his "oligotrophic" loading is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A "mesotrophic" loading would be considered one between "eutrophic" and "oligotrophic".

Note that Vollenweider's model may not be applicable to water bodies with short hydraulic retention times or in which light penetration is severely restricted from high concentrations of suspended solids in the surface waters.

	Total Yearly Phosphorus Loading ($g/m^2/yr$)
Estimated loading for Kentucky Lake	7.09
Vollenweider's "eutrophic" loading	1.77
Vollenweider's "oligotrophic" loading	0.88

V. LITERATURE REVIEWED

Brye, Bruce A. 1970. "Summary of Observed Nutrient Concentrations and Nutrient Entrapment in TVA Reservoirs." pp. 34-51. In: TVA Activities Related to Study and Control of Eutrophication in the Tennessee Valley. National Fertilizer Development Center, Muscle Shoals, Alabama. April 1970.

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U.S. Environmental Protection Agency. 1975. National Eutrophication Survey Methods 1973-1976. Working Paper No. 175. National Environmental Research Center, Las Vegas, Nevada, and Pacific Northwest Environmental Research Laboratory, Corvallis, Oregon.

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VI. APPENDICES

APPENDIX A

CONVERSION FACTORS

CONVERSION FACTORS

Hectares x 2.471 = acres

Meters x 3.281 = feet

Cubic meters x 8.107×10^{-4} = acre feet

Square kilometers x 0.3861 = square miles

Cubic meters/sec x 35.315 = cubic feet/sec

Centimeters x 0.3937 = inches

Kilograms x 2.205 = pounds

Kilograms/square kilometer x 5.711 = lbs/square mile

APPENDIX B

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR KENTUCKY 3/25/75

LAKE CODE 2104 KENTUCKY LAKE

TOTAL DRAINAGE AREA OF LAKE(SQ KM) 104117.9

TRIBUTARY	SUB-DRAINAGE AREA(SQ KM)	NORMALIZED FLOWS(CMS) JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
2104A1	0.0	-339.80	-226.25	-218.32	35.11	-22.51	-67.96	-113.55	-154.33	-126.29	-198.22	-280.05	-263.91	-164.77
2104M1	104117.9	2367.29	2661.76	2973.27	2271.01	1749.98	1107.19	1186.48	1144.00	957.11	982.59	1160.99	1846.26	1696.34
2104C1	83.9	2.55	2.16	2.22	1.57	1.17	0.71	0.61	0.49	0.51	0.43	1.00	1.37	1.23
2104C2	172.5	5.24	4.45	4.56	3.23	2.41	1.46	1.25	1.01	1.04	0.88	2.05	2.81	2.52
2104D1	9.2	0.28	0.24	0.24	0.17	0.13	0.08	0.07	0.05	0.06	0.05	0.11	0.15	0.13
2104E1	336.7	10.22	8.66	8.92	6.31	4.70	2.86	2.44	1.98	2.03	1.72	3.99	5.49	4.93
2104F1	32.4	0.99	0.84	0.86	0.61	0.45	0.27	0.23	0.19	0.20	0.17	0.39	0.53	0.47
2104G1	391.1	11.89	10.08	10.34	7.33	5.47	3.31	2.83	2.29	2.36	1.99	4.64	6.37	5.72
2104M1	1629.1	49.55	41.91	43.04	30.58	22.77	13.82	11.81	9.57	9.83	8.30	19.37	26.59	23.84
2104J1	36.5	1.11	0.94	0.97	0.69	0.51	0.31	0.26	0.21	0.22	0.19	0.43	0.59	0.53
2104K1	10.1	0.31	0.26	0.27	0.19	0.14	0.09	0.07	0.06	0.06	0.05	0.12	0.16	0.15
2104L1	45.6	1.38	1.17	1.21	0.86	0.64	0.39	0.33	0.27	0.27	0.23	0.54	0.74	0.67
2104M1	19.3	0.59	0.50	0.51	0.36	0.27	0.16	0.14	0.11	0.12	0.10	0.23	0.31	0.28
2104N1	15.2	0.46	0.39	0.40	0.28	0.21	0.13	0.11	0.09	0.09	0.08	0.18	0.25	0.22
2104P1	194.5	5.92	5.01	5.15	3.65	2.72	1.65	1.41	1.14	1.17	0.99	2.31	3.17	2.85
2104Q1	99116.6	2514.54	2749.57	2973.27	1897.23	1628.22	1146.83	1203.47	1200.63	991.09	1056.22	1325.23	2135.09	1731.10
2104R1	99.2	1.53	3.03	2.92	2.72	2.14	0.59	0.52	0.74	0.22	0.22	0.67	2.19	1.45
2104S1	46.6	0.72	1.43	1.36	1.28	1.01	0.28	0.24	0.35	0.10	0.10	0.31	1.03	0.68
2104T1	197.1	3.06	6.03	5.78	5.41	4.25	1.18	1.04	1.48	0.44	0.44	1.33	4.36	2.88
2104U1	290.1	4.47	8.86	8.50	7.96	6.26	1.73	1.52	2.17	0.65	0.65	1.95	6.40	4.24
2104V1	22.3	0.35	0.68	0.65	0.61	0.48	0.13	0.12	0.17	0.05	0.05	0.15	0.49	0.33
2104W1	66.0	1.02	2.02	1.93	1.81	1.43	0.39	0.35	0.49	0.15	0.15	0.44	1.46	0.97
2104X1	75.5	1.17	2.31	2.21	2.08	1.63	0.45	0.40	0.57	0.17	0.17	0.51	1.67	1.11
2104Y1	74.1	1.15	2.27	2.17	2.03	1.60	0.44	0.39	0.56	0.17	0.17	0.50	1.64	1.08
2104ZZ	505.0	10.87	12.54	13.22	10.93	8.44	3.43	2.97	3.17	1.96	1.74	4.42	9.12	6.87
2104Z1	0.0	0.89	0.75	0.77	0.55	0.41	0.25	0.21	0.17	0.18	0.15	0.35	0.48	0.43

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 104117.9
SUM OF SUB-DRAINAGE AREAS = 103468.4

TOTAL FLOW IN = 19611.18
TOTAL FLOW OUT = 20407.93

NOTE *** SITE 2104A1=4701V1--NEGATIVE NUMBERS ARE FLOWS OUT OF THE LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2104A1	3	73	-286.00	31	642.79				
	4	73	36.81						
	5	73	-148.38	6	-258.25				
	6	73	2931.93						
	7	73	-215.77	9	-272.41	25	-94.86		
	8	73	-221.44	14	-608.81				
	9	73	-198.22	27	-112.42				
	10	73	-88.35						
	11	73	-286.00	11	-209.54				
	12	73	-410.59						
	1	74	122.90	13	775.88				
	2	74	-330.46	3	59.75				
	3	74	-202.49	16	-331.31				

KE CODE 2104 KENTUCKY LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
210401	3	73	5125.35	31	7249.11				
	4	73	36.76						
	5	73	3171.49	6	3511.29				
	6	73	2931.93						
	7	73	1427.17	9	1446.99	25	1203.47		
	8	73	1174.87	14	1413.01				
	9	73	948.61	27	1056.22				
	10	73	925.96						
	11	73	1319.56	11	866.50				
	12	73	3256.44						
	1	74	7458.66	13	10918.98				
	2	74	6045.64	3	6654.46				
	3	74	2475.74	16	1424.34				
2104C1	3	73	3.74	31	2.37				
	4	73	5.18						
	5	73	2.61	6	2.51				
	6	73	1.49						
	7	73	0.84	9	0.58	25	2.32		
	8	73	0.81	14	2.89				
	9	73	0.63	27	0.55				
	10	73	0.56						
	11	73	2.94	11	0.59				
	12	73	1.44						
	1	74	4.84	13	12.74				
	2	74	1.84	3	2.83				
	3	74	1.68	16	2.83				
2104C2	3	73	7.70	31	4.87				
	4	73	10.68						
	5	73	5.35	6	5.15				
	6	73	3.06						
	7	73	1.72	9	1.19	25	4.76		
	8	73	1.66	14	5.95				
	9	73	1.31	27	6.29				
	10	73	1.14						
	11	73	6.03						
	12	73	2.97	11	1.49				
	1	74	9.97	13	26.22				
	2	74	3.79	3	5.83				
	3	74	3.45	16	5.80				
2104D1	3	73	0.41	31	0.26				
	4	73	0.57						
	5	73	0.29	6	0.28				
	6	73	0.16						
	7	73	0.09	9	0.06	25	0.26		
	8	73	0.09	14	0.32				
	9	73	0.07	27	0.06				
	10	73	0.06						
	11	73	0.32	11	0.06				
	12	73	0.16	11	0.08				
	1	74	0.53	13	1.41				
	2	74	0.20	3	0.31				
	3	74	0.18	16	0.31				

TRIBUTARY FLOW INFORMATION FOR KENTUCKY 3/25/75

LAKE CODE 2104 KENTUCKY LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2104E1	3	73	15.06	31	9.49				
	4	73	20.84						
	5	73	10.45	6	10.06				
	6	73	5.95						
	7	73	3.34	9	2.33	25	9.29		
	8	73	3.23	14	11.64				
	9	73	2.55	27	2.21				
	10	73	2.23						
	11	73	11.78	11	2.35				
	12	73	5.78	1	14.87				
	1	74	19.48	13	51.25				
	2	74	7.39	3	11.38				
	3	74	6.74	16	11.33				
2104F1	3	73	1.45						
	4	73	2.00	15	0.37				
	5	73	1.01	10	1.35				
	6	73	0.57	10	0.24				
	7	73	0.32	6	0.25				
	8	73	0.31	12	0.29				
	9	73	0.25	8	0.25				
	10	73	0.21	13	0.20				
	11	73	1.13	10	0.24				
	12	73	0.56	1	1.54				
	1	74	1.87	12	10.05				
	2	74	0.71	2	0.83	16	0.70		
	3	74	0.65	2	0.38	16	1.09		
2104G1	3	73	17.50						
	4	73	24.21	15	4.42				
	5	73	12.15	10	16.28				
	6	73	6.94	10	2.94				
	7	73	3.88	6	3.00				
	8	73	3.77	12	3.51				
	9	73	2.97	8	3.00				
	10	73	2.59	13	2.38				
	11	73	13.68	10	2.89				
	12	73	6.71	1	18.63				
	1	74	22.63	12	121.48				
	2	74	8.61	2	10.05	16	8.41		
	3	74	7.82	2	4.62	16	13.17		
2104H1	3	73	72.86						
	4	73	100.81	15	18.35				
	5	73	50.69	10	67.96				
	6	73	28.88	10	12.26				
	7	73	16.20	6	12.52				
	8	73	15.69	12	14.61				
	9	73	12.35	8	12.52				
	10	73	10.76	13	9.91				
	11	73	56.92	10	11.98				
	12	73	27.98	1	77.59				
	1	74	94.30	12	505.74				
	2	74	35.68	2	41.91	16	35.11		
	3	74	32.56	2	19.23	16	54.93		

TRIBUTARY FLOW INFORMATION FOR KENTUCKY 3/25/75

LAKE CODE 2104 KENTUCKY LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2104J1	3	73	1.63						
	4	73	2.26	15	0.41				
	5	73	1.13	10	1.52				
	6	73	0.65	10	0.27				
	7	73	0.36	6	0.28				
	8	73	0.35	12	0.33				
	9	73	0.28	8	0.28				
	10	73	0.24	13	0.22				
	11	73	1.28	10	0.27				
	12	73	0.63	1	1.74	9	0.35		
	1	74	2.11	12	11.33				
	2	74	0.80	2	0.94	16	0.79		
	3	74	0.73	2	0.43	16	1.23		
2104K1	3	73	1.31						
	4	73	1.81	15	0.33				
	5	73	0.91	14	0.36				
	6	73	0.52	14	0.83				
	7	73	0.29	29	0.0				
	8	73	0.28	11	0.0				
	9	73	0.22	8	0.0				
	10	73	0.19	13	0.0				
	11	73	1.03	10	0.0				
	12	73	0.50	9	0.28				
	1	74	1.69	12	9.09				
	2	74	0.64	2	0.75	27	0.39		
	3	74	0.59	10	0.41	28	0.37		
2104L1	3	73	2.04						
	4	73	2.82	14	0.53				
	5	73	1.42	14	0.56				
	6	73	0.81	14	1.29				
	7	73	0.45	29	0.33				
	8	73	0.44	11	0.33				
	9	73	0.35	8	0.35				
	10	73	0.30	13	0.28				
	11	73	1.59	11	0.32				
	12	73	0.78	9	0.44				
	1	74	2.64	12	14.16				
	2	74	1.00	10	1.17	27	0.60		
	3	74	0.91	10	0.63	28	0.70		
2104M1	3	73	0.86						
	4	73	1.19	14	0.23				
	5	73	0.60	14	0.24				
	6	73	0.34	14	0.55				
	7	73	0.19	29	0.14				
	8	73	0.19	11	0.14				
	9	73	0.15	8	0.15				
	10	73	0.13	13	0.12				
	11	73	0.67	11	0.13				
	12	73	0.33	9	0.14				
	1	74	1.12	12	6.00				
	2	74	0.42	10	0.50	27	0.26		
	3	74	0.39	10	0.27	28	0.30		

13

TRIBUTARY FLOW INFORMATION FOR KENTUCKY 3/25/75

LAKE CODE 2104 KENTUCKY LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2104N1	3	73	0.68						
	4	73	0.44	14	0.15				
	5	73	0.47	14	0.17				
	6	73	0.27	14	0.43				
	7	73	0.15	29	0.11				
	8	73	0.15	11	0.11				
	9	73	0.11	8	0.12				
	10	73	0.10	13	0.09				
	11	73	0.53	11	0.11				
	12	73	0.26	9	0.15				
	1	74	0.87	12	4.70				
	2	74	0.33	10	0.39	27	0.20		
	3	74	0.30	10	0.21	28	0.23		
2104P1	3	73	8.69						
	4	73	12.03	14	2.28				
	5	73	6.03	14	2.38				
	6	73	3.45	14	5.52				
	7	73	0.15	29	0.11				
	8	73	1.87	11	1.42				
	1	74	11.24	12	60.31				
	2	74	4.28	10	4.98	27	2.57		
	3	74	3.88	10	2.70	28	3.00		
2104Q1	3	73	5097.03						
	4	73	2228.54	14	1529.11				
	5	73	2860.00	14	2248.36				
	6	73	2709.92	14	1928.38				
	7	73	1571.58	29	1936.87				
	8	73	1362.04	11	1690.52				
	9	73	1027.90	8	1076.04				
	10	73	948.61	13	945.78				
	11	73	1676.36	10	928.79				
	12	73	3403.69	8	2840.18				
	1	74	7370.87	12	12770.90				
	2	74	5125.35	10	4870.50	27	5181.98		
	3	74	2466.40	10	1877.41	29	2361.62		
2104R1	3	73	4.45						
	4	73	6.34	14	1.64				
	5	73	2.39	14	0.93				
	6	73	0.63	14	0.57				
	7	73	0.42	29	0.43				
	8	73	0.49	11	0.71				
	9	73	0.36	8	0.43				
	10	73	0.36	13	0.36				
	11	73	1.29	10	0.39				
	12	73	1.30	8	0.61				
	1	74	6.20	12	6.99				
	2	74	1.55	10	0.88	27	1.16		
	3	74	1.42	10	1.08	29	0.78		

TRIBUTARY FLOW INFORMATION FOR KENTUCKY 3/25/75

LAKE CODE 2104 KENTUCKY LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2104S1	3	73	2.08						
	4	73	2.97	14	0.77				
	5	73	1.12	14	0.44				
	6	73	0.29	14	0.27				
	7	73	0.20	29	0.20				
	8	73	0.23	11	0.33				
	9	73	0.17	8	0.20				
	10	73	0.17	13	0.17				
	11	73	0.61	10	0.14				
	12	73	0.61	8	0.29				
	1	74	2.92	12	3.28				
	2	74	0.73	10	0.42	27	0.55		
	3	74	0.67	10	0.51	29	0.37		
2104T1	3	73	8.81						
	4	73	12.63	14	3.26				
	5	73	4.73	14	1.85				
	6	73	1.25	14	1.13				
	7	73	0.85	29	0.85				
	8	73	0.97	11	1.42				
	9	73	0.72	8	0.85				
	10	73	0.72	13	0.71				
	11	73	2.57	10	0.78				
	12	73	2.59	8	1.20				
	1	74	12.32	12	13.93				
	2	74	3.09	10	1.76	27	2.30		
	3	74	2.82	10	2.15	29	1.55		
2104U1	3	73	12.97						
	4	73	18.58	15	4.59				
	5	73	6.97	10	6.37				
	6	73	1.84	10	3.23				
	7	73	1.24	6	1.04				
	8	73	1.43	12	1.88				
	9	73	1.05	8	1.25				
	10	73	1.05	13	1.04				
	11	73	3.77	10	1.15				
	12	73	3.79	1	8.75				
	1	74	18.12	12	20.50				
	2	74	4.53	2	4.98	16	1.59		
	3	74	4.16	2	2.29	16	8.55		
2104V1	3	73	1.00						
	4	73	1.43	15	0.35				
	5	73	0.54	10	0.49				
	6	73	0.14	10	0.25				
	7	73	0.09	6	0.08				
	8	73	0.11	12	0.14				
	9	73	0.08	8	0.10				
	10	73	0.08	13	0.08				
	11	73	0.29	10	0.09				
	12	73	0.29	1	0.67				
	1	74	1.39	12	1.57				
	2	74	0.35	2	0.38	16	0.12		
	3	74	0.32	2	0.18	16	0.66		

TRIBUTARY FLOW INFORMATION FOR KENTUCKY 3/25/75

LAKE CODE 2104 KENTUCKY LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2104W1	3	73	2.94						
	4	73	4.22	15	1.05				
	5	73	1.59	10	1.45				
	6	73	0.42	10	0.74				
	7	73	0.28	6	0.24				
	8	73	0.33	12	0.43				
	9	73	0.24	8	0.29				
	10	73	0.24	13	0.24				
	11	73	0.29	10	0.09				
	12	73	0.29	1	0.67				
	1	74	4.13	12	4.67				
	2	74	1.03	2	1.13	16	0.36		
	3	74	0.95	2	0.52	16	1.93		
2104X1	3	73	3.37						
	4	73	4.84	15	1.20				
	5	73	1.82	10	1.66				
	6	73	0.48	10	0.84				
	7	73	0.32	6	0.27				
	8	73	0.37	12	0.49				
	9	73	0.27	8	0.33				
	10	73	0.27	13	0.27				
	11	73	0.98	10	0.30				
	12	73	0.99	1	2.28				
	1	74	4.73	12	5.35				
	2	74	1.18	2	1.30	16	0.42		
	3	74	1.08	2	0.60	16	2.23		
2104Y1	3	73	3.31						
	4	73	4.76	18	13.59				
	5	73	1.78	10	1.63				
	6	73	0.47	10	0.83				
	7	73	0.32	6	0.27				
	8	73	0.37	12	0.48				
	9	73	0.27	8	0.32				
	10	73	0.27	13	0.27				
	11	73	0.96	10	0.24				
	12	73	0.97	1	2.23				
	1	74	4.62	12	5.24				
	2	74	1.16	2	1.27	16	0.41		
	3	74	1.06	2	0.58	16	2.19		
2104ZZ	3	73	21.21						
	4	73	3.00						
	5	73	13.08						
	6	73	5.72						
	7	73	3.37						
	8	73	3.43						
	9	73	2.66						
	10	73	2.43						
	11	73	11.38						
	1	74	28.60						
	2	74	8.92						
	3	74	8.16						

TRIBUTARY FLOW INFORMATION FOR KENTUCKY 3/25/75

LAKE CODE 2104 KENTUCKY LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
210471	3	73	0.45						
	4	73	0.62						
	5	73	0.31						
	6	73	0.18						
	7	73	0.10	29	0.07				
	8	73	0.10	2	0.09				
	9	73	0.08	8	0.0				
	10	73	0.07	13	0.0				
	11	73	0.35	10	0.0				
	12	73	0.17						
	1	74	0.58	12	3.11				
	2	74	0.22	10	0.13	27	0.22		
	3	74	0.20	10	0.14	28	0.16		

APPENDIX C

PHYSICAL AND CHEMICAL DATA

STORET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210401
37 00 00.0 088 15 32.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
3

2111202
0068 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/15	10 40	0000		30	140	19.1	8.00		5.9	50	0.084	0.033
	10 40	0004			140	19.1	7.80	8.8		50	0.080	0.031
	10 40	0015			140	19.0	7.80	8.5		54	0.079	0.032
	10 40	0025			140	19.0	7.80	8.6		54	0.087	0.039
	10 40	0040			140	19.0	7.80	8.6		53	0.075	0.031
	10 40	0054			140	18.9	7.80	8.6		54	0.091	0.032
73/08/13	10 15	0000	89.0	52	165	29.1	7.60	17.6	11.0	56	0.072	0.041
	10 15	0015	89.0		165	29.0	7.60	6.8		57	0.066	0.030
	10 15	0030	98.0		163	28.9	7.60	6.6		57	0.063	0.028
	10 15	0045	94.0		163	28.8	7.50	6.6		57	0.071	0.026
	10 15	0065	88.0		163	28.8	7.50	6.2		57	0.084	0.026
73/10/20	10 36	0000	87.0	37	140	21.3	7.60		4.7	61	0.075	0.041
	10 36	0005	88.0		140	21.2	7.50	7.6		61	0.069	0.038
	10 36	0015	86.0		140	21.1	7.50	7.6		62	0.072	0.035
	10 36	0035	86.0		140	21.1	7.40	7.6		56	0.070	0.038
	10 36	0062	62.0		140	20.9	7.30	6.8		59	0.113	0.035

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/15	10 40	0000	0.5	0.500	0.070
	10 40	0004	0.5	0.200	0.070
	10 40	0015	0.5	0.200	0.080
	10 40	0025	0.5	0.200	0.080
	10 40	0040	0.5	0.200	0.080
	10 40	0054	0.5	0.200	0.080
73/08/13	10 15	0000	0.1	1.200	0.080
	10 15	0015	0.1	0.900	0.090
	10 15	0030	0.1	0.800	0.080
	10 15	0045	0.1	0.600	0.090
	10 15	0065	0.1	0.600	0.090
73/10/20	10 36	0000	0.3	0.300	0.040
	10 36	0005	0.3	0.200K	0.030
	10 36	0015	0.3	0.200K	0.030
	10 36	0035	0.3	0.200K	0.040
	10 36	0062	0.3	0.300	0.070

— K VALUE KNOWN TO BE LESS THAN INDICATED —

...PET RETRIEVAL DATE, 75/03/31
...ATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210402
36 53 07.0 088 09 45.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
3

2111202
0036 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS *	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
										54	0.099	0.038
				36	145	20.1	7.80			54	0.082	0.031
73/05/15	13 20	0000			140	19.3	7.80	8.6		55	0.079	0.034
	13 20	0006			140	19.2	7.80	8.5		55	0.077	0.030
	13 20	0015			140	19.2	7.80	6.3		50	0.089	0.030
	13 20	0024			140	19.2	7.80	10.6		58	0.070	0.020
	13 20	0032			162	29.3	7.90		15.6	57	0.070	0.026
73/08/13	13 25	0000	86.0	44	146	29.3	7.80	10.2				
	13 25	0010	86.0		164	29.3				57	0.091	0.023
	13 25	0020	82.0		164	29.2	7.80	7.0				
	13 25	0025	68.0									

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/15	13 20	0000	0.5	0.200	0.060
	13 20	0006	0.5	0.200	0.060
	13 20	0015	0.5	0.200	0.070
	13 20	0024	0.5	0.200	0.080
	13 20	0032	0.5	0.300	0.070
73/08/13	13 25	0000	0.1	0.900	0.080
	13 25	0010	0.1	0.700	0.070
	13 25	0025	0.1	0.700	0.080

37

STORET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210403
36 45 40.0 088 06 58.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
3

2111202
0054 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/15	13 50	0000		28	140	19.7	7.80		6.8	57	0.075	0.038
	13 50	0006			140	19.6	7.80	8.7		50	0.083	0.027
	13 50	0015			145	19.5	7.80	8.5		55	0.084	0.026
	13 50	0025			140	19.3	7.80	8.5		55	0.103	0.026
	13 50	0040			140	19.2	7.80	8.4		54	0.087	0.025
	13 50	0060			140	19.2	7.80	8.6		52	0.104	0.026
73/08/13	14 00	0000	85.0	44	167	29.5	7.80		9.3	58	0.070	0.023
	14 00	0005	89.0		169	29.1	7.70	6.8		59	0.058	0.023
	14 00	0010	88.0		169	29.1						
	14 00	0020	94.0		169	29.0						
	14 00	0030	95.0		168	29.0	7.60	6.6		58	0.065	0.022
	14 00	0040	79.0		168	28.9						
	14 00	0050	69.0		169	28.8	7.50	5.2		60	0.104	0.027
73/10/20	09 49	0000	83.0	35	145	21.5	7.60		6.9	62	0.095	0.043
	09 49	0005	82.0		145	21.4	7.60	7.8		61	0.086	0.038
	09 49	0015	82.0		146	21.4	7.50	7.6		61	0.085	0.039
	09 49	0030	83.0		145	21.4	7.40	7.6		62	0.078	0.041
	09 49	0054	72.0		146	21.3	7.30	7.0		63	0.102	0.041

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/15	13 50	0000	0.5	0.200	0.070
	13 50	0006	0.5	0.100	0.060
	13 50	0015	0.5	0.200K	0.070
	13 50	0025	0.5	0.200K	0.070
	13 50	0040	0.5	0.200K	0.070
	13 50	0060	0.5	0.200	0.060
73/08/13	14 00	0000	0.1	0.500	0.080
	14 00	0005	0.2	0.300	0.090
	14 00	0030	0.2	0.200	0.100
	14 00	0050	0.2	0.400	0.150
73/10/20	09 49	0000	0.3	1.000	0.050
	09 49	0005	0.3	0.300	0.030
	09 49	0015	0.3	0.200	0.030
	09 49	0030	0.3	0.200	0.030
	09 49	0054	0.3	0.200K	0.050

— K VALUE KNOWN TO BE LESS THAN INDICATED —

...DMET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

21040
3N 38 17.0 088 03 20.0
KENTUCKY LAKE
21 KENTUCKY

11EMALES
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2111202
0063 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/15	14 30	0000		24	142	19.5	7.80		5.4	48	0.092	0.028
	14 30	0006			140	19.5	7.90	8.6		56	0.080	0.031
	14 30	0015			140	19.3	8.00	8.2		57	0.096	0.029
	14 30	0025			140	19.3	7.90	8.3		57	0.090	0.031
	14 30	0040			140	19.3	7.80	8.3		57	0.089	0.030
	14 30	0059			140	19.3	7.90	8.3		56	0.093	0.030
73/08/13	14 45	0000	86.0	48	171	29.4	7.80	7.6	7.6	58	0.053	0.030
	14 45	0010	87.0		172	29.1	7.40	6.4		58	0.058	0.023
	14 45	0020	86.0		173	29.0	7.50	6.4		55	0.064	0.023

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/15	14 30	0000	0.5	0.200	0.080
	14 30	0006	0.5	0.200K	0.070
	14 30	0015	0.5	0.200K	0.070
	14 30	0025	0.5	0.200K	0.070
	14 30	0040	0.5	0.200K	0.070
	14 30	0059	0.5	0.200K	0.070
73/08/13	14 45	0000	0.2	0.500	0.090
	14 45	0010	0.2	0.300	0.090
	14 45	0020	0.2	0.300	0.090

__K VALUE KNOWN TO BE LESS THAN INDICATED __

40

STOMET RETRIEVAL DATE 75/03/31
NATL EUTHOPHICATION SURVEY
NERC-LAS VEGAS

210405
36 29 33.0 088 03 15.0
KENTUCKY LAKE
21 KENTUCKY

11EWALES
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2111202
0056 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/15	17 00	0000		33	190	19.8	6.70		4.5	54	0.068	0.026
	17 00	0006			145	19.6	7.60	8.9		49	0.081	0.027
	17 00	0015			145	19.5	7.60	8.2		56	0.077	0.029
	17 00	0025			145	19.4	7.70	8.2		54	0.075	0.031
	17 00	0040			140	19.3	7.70	8.2		47	0.088	0.027
	17 00	0059			125	19.0	7.90	8.5		40	0.094	0.024
73/08/13	15 45	0000	85.0	48	172	29.6	7.80	7.6	13.5	54	0.070	0.026
	15 45	0010	86.0		175	29.5	7.70	7.4		53	0.063	0.026
	15 45	0020	87.0		172	29.3	7.60	6.4		54	0.061	0.027
	15 45	0030	96.0		171	29.1						
	15 45	0040	98.0		168	29.0	7.70	7.4		51	0.070	0.021
	15 45	0053	96.0		169	28.9	7.70	12.0		52	0.068	0.023
73/10/20	12 42	0000	82.0	38	147	21.0	7.40		5.1	60	0.086	0.044
	12 42	0005	81.0		146	21.0	7.40	7.4		52	0.080	0.045
	12 42	0015	79.0		145	21.0	7.30	7.2		51	0.078	0.040
	12 42	0030	80.0		145	21.0	7.30	7.4		51	0.086	0.039
	12 42	0052	79.0		145	21.0	7.30	7.6		49	0.095	0.038

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/15	17 00	0000	0.5	0.500	0.080
	17 00	0006	0.5	0.100	0.060
	17 00	0015	0.5	0.200	0.070
	17 00	0025	0.5	0.200K	0.070
	17 00	0040	0.5	0.200K	0.080
	17 00	0059	0.4	0.200	0.080
73/08/13	15 45	0000	0.2	0.600	0.070
	15 45	0010	0.2	0.300	0.070
	15 45	0020	0.2	0.300	0.100
	15 45	0040	0.2	0.300	0.070
	15 45	0053	0.2	0.300	0.060
73/10/20	12 42	0000	0.4	0.300	0.060
	12 42	0005	0.4	0.200	0.040
	12 42	0015	0.4	0.300	0.050
	12 42	0030	0.4	0.200	0.040
	12 42	0052	0.4	0.200	0.040

— K VALUE KNOWN TO BE LESS THAN INDICATED —

ORET RETRIEVAL DATE. 75/03/31
NATL EUTHOPHICATION SURVEY
NERC-LAS VEGAS

210406
36 23 28.0 088 00 53.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
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2111202
0061 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/16	10 10	0000		30	155	19.6	7.50		5.7	58	0.085	0.029
	10 10	0006			145	19.5	7.60	8.0		56	0.073	0.028
	10 10	0015			145	19.5	7.60	8.2		56	0.071	0.029
	10 10	0025			145	19.5	7.70	8.2		56	0.079	0.028
	10 10	0040			145	19.5	7.70	8.2		54	0.080	0.031
	10 10	0057			145	19.5	7.70	8.2		54	0.082	0.029
73/08/14	10 00	0000	90.0	42	170	29.1	7.20		5.3	55	0.083	0.034
	10 00	0005	88.0		174	29.1	7.30	6.2		54	0.067	0.032
	10 00	0030	55.0		173	29.1	7.30			56	0.071	0.036
	10 00	0046	55.0		173	29.1	7.30	6.4		56	0.073	0.032

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/16	10 10	0000	0.5	0.300	0.070
	10 10	0006	0.5	0.200K	0.060
	10 10	0015	0.5	0.200K	0.070
	10 10	0025	0.5	0.400	0.070
	10 10	0040	0.5	0.300	0.060
	10 10	0057	0.5	0.300	0.070
73/08/14	10 00	0000	0.3	0.600	0.110
	10 00	0005	0.3	0.400	0.100
	10 00	0030	0.3	0.500	0.090
	10 00	0046	0.3	0.400	0.090

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 75/03/31
NATL EUTHOPHICATION SURVEY
NERC-LAS VEGAS

210407
36 16 22.0 088 08 35.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
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2111202
0018 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS *	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/16	13 15	0000		36	73	17.7	7.50		27.8	22	0.068	0.009
	13 15	0006			70	17.7	7.50	2.4		21	0.071	0.008
	13 15	0014			70	17.2	7.40	4.2		23	0.079	0.010
73/08/14	13 20	0000	68.0	18	80	27.5	7.10	6.6	25.0	21	0.072	0.009
	13 20	0004	62.0		80	27.2	7.10	6.6		20	0.080	0.010
	13 20	0008	26.0		79	26.3	7.00	5.2		20	0.112	0.013
73/10/20	13 12	0000	67.0	30	57	17.3	8.60		38.7	15	0.079	0.012
	13 12	0002	67.0		57	17.3	8.10	9.8		15	0.091	0.011
	13 12	0005	67.0		57	17.3	7.80	9.4		15	0.095	0.010

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/16	13 15	0000	0.1	0.800	0.130
	13 15	0006	0.1	0.500	0.120
	13 15	0014	0.1	0.400	0.130
73/08/14	13 20	0000	0.1	1.000	0.110
	13 20	0004	0.2	0.900	0.120
	13 20	0008	0.2	0.800	0.180
73/10/20	13 12	0000	0.04	0.900	0.040
	13 12	0002	0.03	0.800	0.040
	13 12	0005	0.04	1.000	0.040

NET RETRIEVAL DATE 75/03/31
ATL EUTHORMICATION SURVEY
NERC-LAS VEGAS

210408
36 16 17.0 088 05 30.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
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2111202
0019 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS *	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/16	13 50	0000		18	55	19.5	7.80		12.7	16	0.061	0.007
	13 50	0006			58	19.6	7.80	7.8		16	0.064	0.005
	13 50	0015			55	19.3	7.70	7.8		16	0.069	0.006
73/08/14	13 50	0000	72.0	18	86	28.2	7.00		19.4	24	0.050	0.007
	13 50	0008	69.0		84	28.0	7.00	6.6		22	0.055	0.008
	13 50	0010	58.0		73	27.4	7.00	6.4		22	0.065	0.007
73/10/20	13 29	0000		18			8.50		21.0	16	0.088	0.012
	13 29	0003	52.0		40	15.8	7.70	9.6		12	0.079	0.013
	13 29	0007	55.0		39	15.7	7.40	9.4		12	0.077	0.010

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/16	13 50	0000	0.2	0.400	0.120
	13 50	0006	0.2	0.400	0.120
	13 50	0015	0.2	0.400	0.120
73/08/14	13 50	0000	0.1	0.900	0.140
	13 50	0008	0.1	0.600	0.130
	13 50	0010	0.1	0.700	0.120
73/10/20	13 29	0000	0.1	0.900	0.070
	13 29	0003	0.1	0.500	0.060
	13 29	0007	0.1	0.600	0.050

STORET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210404
36 16 17.0 087 56 42.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
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2111202
0067 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/16	16 00	0000		33	155	20.0	7.70		9.1	60	0.083	0.032
	16 00	0006			145	20.0	7.70	8.4		60	0.081	0.026
	16 00	0015			155	19.9	7.70	8.4		61	0.092	0.031
	16 00	0025			150	19.9	7.70	8.6		58	0.076	0.025
	16 00	0045			155	19.9	7.70	8.2		59	0.071	0.026
	16 00	0063			150	19.8	7.70	8.2		58	0.071	0.024
73/10/20	13 50	0000	82.0	36	152	22.2	7.60		3.1	51	0.088	0.041
	13 50	0005	81.0		152	21.8	7.50	7.4		51	0.085	0.044
	13 50	0015	82.0		149	21.6	7.50	7.4		52	0.091	0.042
	13 50	0035	84.0		151	21.5	7.50	7.8		54	0.083	0.046
	13 50	0056	83.0		150	21.4	7.40	7.4		53	0.082	0.040

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/16	16 00	0000	0.5	0.500	0.100
	16 00	0006	0.5	0.200K	0.080
	16 00	0015	0.5	0.200K	0.070
	16 00	0025	0.5	0.200K	0.060
	16 00	0045	0.5	0.200K	0.080
	16 00	0063	0.5	0.200	0.080
73/10/20	13 50	0000	0.4	0.300	0.070
	13 50	0005	0.4	0.300	0.070
	13 50	0015	0.4	0.300	0.070
	13 50	0035	0.4	0.200	0.070
	13 50	0056	0.4	0.200	0.060

__K VALUE KNOWN TO BE LESS THAN INDICATED __

STORET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NENC-LAS VEGAS

210410
36 06 14.0 087 56 15.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
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2111202
0049 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/16	17	00 0000		33	160	20.2	7.50		10.1	61	0.071	0.033
	17	00 0006			160	20.2	7.70	8.6		60	0.072	0.030
	17	00 0015			150	20.2	7.80	8.4		62	0.066	0.031
	17	00 0025			155	20.0	7.70	8.2		62	0.076	0.032
	17	00 0045			165	19.9	7.70	8.2		61	0.079	0.029
73/08/14	15	45 0000	85.0	40	175	29.6	7.20		4.4	57	0.071	0.038
	15	45 0005	85.0		176	29.6	7.20	6.8		56	0.062	0.036
	15	45 0010	85.0		177	29.5	7.30	6.4		56	0.060	0.035
	15	45 0025	90.0		177	29.2						
	15	45 0035	89.0		176	29.2						
	15	45 0043	92.0		176	29.2	7.20	6.4		57	0.071	0.030

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/16	17	00 0000	0.5	0.400	0.080
	17	00 0006	0.5	0.200	0.050
	17	00 0015	0.5	0.200	0.060
	17	00 0025	0.5	0.200K	0.070
	17	00 0045	0.5	0.200K	0.070
73/08/14	15	45 0000	0.3	0.700	0.080
	15	45 0005	0.3	0.400	0.080
	15	45 0010	0.3	0.400	0.080
	15	45 0043	0.3	0.600	0.150

K VALUE KNOWN TO BE LESS THAN INDICATED

-96-

STORET RETRIEVAL DATE 73/05/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210411
36 00 22.0 087 59 56.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
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2111202
0053 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00076 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MIC-MHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/17	10 00	0000		36	161	19.9	7.70	8.2	5.7	56	0.110	0.028
	10 00	0006			159	19.9	7.70	8.2		56	0.057	0.027
	10 00	0015			158	19.9	7.70	8.2		56	0.083	0.033
	10 00	0030			158	19.9	7.70	8.2		56	0.114	0.027
	10 00	0049			152	19.8	7.70	8.2		56	0.260	0.028

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/17	10 00	0000	0.5	0.700	0.090
	10 00	0006	0.5	0.400	0.060
	10 00	0015	0.5	0.400	0.060
	10 00	0030	0.5	0.400	0.060
	10 00	0049	0.5	0.300	0.060

STORET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210412
35 45 55.0 087 59 15.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
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2111202
0051 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/17	12 10	0000		48	129	20.4	7.70		4.4	53	0.059	0.030
	12 10	0006			159	20.3	7.70	8.2		54	0.056	0.033
	12 10	0015			158	20.2	7.70	8.0		53	0.054	0.029
	12 10	0030			159	20.1	7.70	7.8		51	0.053	0.035
	12 10	0047			157	20.1	7.70	8.0		48	0.056	0.029

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/17	12 10	0000	0.5	0.600	0.080
	12 10	0006	0.5	0.300	0.060
	12 10	0015	0.5	0.300	0.060
	12 10	0030	0.5	0.300	0.060
	12 10	0047	0.5	0.300	0.400

-48

STORET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210413
35 37 52.0 088 01 57.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
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2111202
0049 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/17	12	35 0000		36	150	20.1	7.70		3.5	51	0.046	0.025
	12	35 0006			148	20.1	7.70	8.2		53	0.050	0.030
	12	35 0015			158	20.0	7.60	8.9		53	0.052	0.029
	12	35 0030			158	20.0	7.60	7.8		52	0.050	0.030
	12	35 0045			159	20.0	7.70	8.1		51	0.050	0.029
73/10/22	10	32 0000	93.0	69	159	22.2	7.60		1.4	62	0.073	0.049
	10	32 0015	93.0		159	22.0	7.60	7.4		63	0.060	0.047
	10	32 0038	90.0		159	22.0	7.60	7.4		65	0.065	0.047

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/17	12	35 0000	0.5	0.400	0.070
	12	35 0006	0.5	0.400	0.070
	12	35 0015	0.5	0.300	0.070
	12	35 0030	0.5	0.300	0.070
	12	35 0045	0.5	0.300	0.070
73/10/22	10	32 0000	0.5	0.600	0.060
	10	32 0015	0.5	0.200	0.040
	10	32 0038	0.5	0.200	0.050

RET RETRIEVAL DATE 73/03/31
NATL EUTHOPHICATION SURVEY
NERC-LAS VEGAS

210414
35 23 36.0 087 58 55.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
3

2111202
0041 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/17	12 45	0000		36	158	20.1	7.70		1.7	56	0.057	0.034
	12 45	0006			159	20.1	7.70	8.1		56	0.093	0.034
	12 45	0015			160	20.1	7.80	8.0		56	0.053	0.035
	12 45	0025			159	20.1	7.80	7.8		56	0.053	0.034
	12 45	0037			160	20.1	7.70	7.2		56	0.054	0.030

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/17	12 45	0000	0.6	0.800	0.100
	12 45	0006	0.5	0.400	0.070
	12 45	0015	0.5	0.400	0.090
	12 45	0025	0.6	0.300	0.090
	12 45	0037	0.5	0.300	0.090

STORET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210415
35 22 47.0 088 11 45.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
3

2111202
0037 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/17	13 35	0000		36	158	19.9	7.80		1.6	52	0.053	0.032
	13 35	0006			158	20.0	7.80	7.9		51	0.051	0.034
	13 35	0015			159	19.9	7.70	8.1		51	0.053	0.034
	13 35	0033			159	19.9	7.70	8.2		53	0.054	0.028
73/10/22	09 54	0000	95.0	73	160	22.0	7.60		2.3	56	0.056	0.045
	09 54	0005	95.0		160	22.0	7.60	8.0		57	0.055	0.042
	09 54	0015	95.0		160	22.0	7.60	7.4		57	0.055	0.042
	09 54	0025	95.0		160	22.0	7.50	7.6		60	0.058	0.042

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/17	13 35	0000	0.5	0.600	0.080
	13 35	0006	0.5	0.300	0.070
	13 35	0015	0.5	0.300	0.080
	13 35	0033	0.5	0.300	0.060
73/10/22	09 54	0000	0.4	0.400	0.060
	09 54	0005	0.4	0.200	0.030
	09 54	0015	0.4	0.200	0.050
	09 54	0025	0.4	0.200	0.040

STORET RETRIEVAL DATE 75/03/31
NATL EUTHOPHICATION SURVEY
NERC-LAS VEGAS

210416
35 14 28.0 088 15 25.0
KENTUCKY LAKE
21 KENTUCKY

11 EPALES
3

2111202
0037 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/17	15 40	0000		36	158	20.1	7.70		1.4	56	0.056	0.033
	15 40	0006			159	20.1	7.70	8.2		57	0.058	0.040
	15 40	0015			160	20.1	7.70	8.2		56	0.054	0.032
	15 40	0033			168	20.1	7.70	8.2		57	0.055	0.035

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/17	15 40	0000	0.5	0.400	0.100
	15 40	0006	0.5	0.400	0.080
	15 40	0015	0.5	0.400	0.070
	15 40	0033	0.5	0.400	0.090

STORET RETRIEVAL DATE 75/03/31
NATL EUTROPHICATION SURVEY
NERC-LAS VEGAS

210417
35 56 27.0 087 56 07.0
KENTUCKY LAKE
21 KENTUCKY

11EPALES
3

2111202
0045 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00074 TURB TRANS %	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00010 WATER TEMP CENT	00400 PH SU	00300 DO MG/L	32217 CHLRPHYL A UG/L	00410 T ALK CACO3 MG/L	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P
73/05/17	16	15 0000		36	150	20.4	7.10		5.1	54	0.061	0.029
	16	15 0006			150	20.4	7.50	8.2		54	0.064	0.026
	16	15 0015			150	20.1	7.70	7.9		54	0.055	0.028
	16	15 0030			148	20.0	7.60	7.9		54	0.055	0.027
	16	15 0041			150	20.1	7.70	8.0		54	0.057	0.029
73/08/15	10	00 0000	85.0	66	171	29.4	7.70	6.0	7.0	52	0.046	0.036
	10	00 0015			172	29.4	7.60	6.2		55	0.048	0.034
	10	00 0031			172	29.4	7.50	5.8		53	0.044	0.037
73/10/22	12	47 0000	94.0	48	154	22.2	7.60		5.4	64	0.063	0.049
	12	47 0005	93.0		154	22.0	7.60	7.8		63	0.060	0.046
	12	47 0015	92.0		154	21.9	7.60	7.4		62	0.057	0.045
	12	47 0028	92.0		154	21.9	7.60	7.4		60	0.059	0.044

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L
73/05/17	16	15 0000	0.5	0.300	0.060
	16	15 0006	0.5	0.200	0.060
	16	15 0015	0.5	0.200	0.070
	16	15 0030	0.5	0.200	0.070
	16	15 0041	0.5	0.200	0.060
73/08/15	10	00 0000	0.3	0.500	0.040
	10	00 0015	0.3	0.300	0.040
	10	00 0031	0.3	0.200	0.040
73/10/22	12	47 0000	0.4	0.500	0.070
	12	47 0005	0.4	0.200K	0.040
	12	47 0015	0.4	0.200K	0.040
	12	47 0028	0.4	0.200K	0.050

K VALUE KNOWN TO BE LESS THAN INDICATED

APPENDIX D

TRIBUTARY AND WASTEWATER TREATMENT PLANT DATA

STORET RETRIEVAL DATE 75/03/31

2104A1 LS2104A1
36 59 30.0 088 13 00.0
BARKLEY CANAL
21 7.5 BIRMINGHAM P
T/KENTUCKY LAKE
BNDG ON ST HT 453 6 MI SE GRAND RIVERS
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/03/31	10	45	0.040	0.046	0.6	0.420	0.039		
73/05/06	10	50	0.100	0.048	0.5	0.500	0.066		
73/07/09	11	04	0.070	0.019	0.2	0.500	0.126		
73/07/25	11	09	0.090	0.046	0.1	2.410	0.067		
73/08/14	11	30	0.065	0.024	0.1	2.700	0.100		
73/09/27	11	40	0.055	0.014	0.02	0.660	0.058		
73/11/11	10	30	0.070	0.036	0.3	0.975	0.046		
74/01/13	10	15	0.150	0.060	0.6	1.600	0.680		
74/02/03	11	30	0.115	0.040	0.6	0.100	0.015		
74/03/16	11	03	0.085	0.035	0.6	1.000	0.060		

STORET RETRIEVAL DATE 75/03/31

210481 LS210481
37 01 30.0 088 17 00.0
TENNESSEE RIVER
21 7.5 CALVERT CITY
0/KENTUCKY LAKE
8-06 (KENTUCK DAM) ON HWY 62
11E4LES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/03/31	09 45		0.110	0.042	0.4	0.500	0.168		
73/05/06	10 00		0.105	0.049	0.5	0.630	0.088		
73/07/09	10 10		0.040	0.009	0.1	0.340	0.048		
73/07/25	10 35		0.160	0.040	0.2	0.610	0.028		
73/08/14	11 00		0.060	0.024	0.1	0.960	0.044		
73/09/27	11 15		0.065	0.014	0.01	0.320	0.058		
73/11/11	09 40		0.050	0.040	0.4	2.000	0.144		
74/01/13	09 45		0.085	0.050	0.5	2.000	0.735		
74/02/03	10 40		0.105	0.045	0.6	0.500	0.040		
74/03/16	10 17		0.085	0.035	0.6	0.800	0.035		

RET RETRIEVAL DATE 75/03/31

2104C1 LS2104C1
36 46 00.0 088 14 00.0
JUNATMAN CREEK
21 7.5 FAIRDEALING
T/KENTUCKY LAKE
MAY 60 DRUG E OF HARDIN APPROX 6 MI
11EMALES 2111204
6 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
74/03/31	12 15		0.055	0.010	0.2	0.580	0.048		
74/05/06	13 45		0.070	0.014	0.1	0.650	0.072		
74/07/09	11 55		0.045	0.005K	0.02	0.655	0.017		
74/07/25	12 05		0.240	0.132	0.3	2.310	0.240		
74/08/14	12 30		0.410	0.132	0.5	6.100	0.920		
74/09/27	13 00		0.085	0.010	0.01K	1.470	0.220		
74/11/11	11 15		0.050	0.012	0.01	1.800	0.044		
75/01/13	11 40		0.020	0.012	0.7	0.300	0.050		
75/02/03	12 40		0.150	0.025	0.5	0.600	0.030		
75/03/16	10 07		0.150	0.020	0.6	1.300	0.090		

_K VALUE KNOWN TO BE LESS THAN INDICATED

TORET RETRIEVAL DATE 75/03/31

210402
36 48 25.0 088 12 05.0
JONATHAN CREEK
21 7.5 FAIRDEALING
T/KENTUCKY LAKE
HWY 68 BRDG 4 MI NE OF AURORA
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/03/31	12 45		0.070	0.013	0.3	0.460	0.018		
73/05/06	12 00		0.045	0.006	0.03	0.490	0.030		
73/07/09	12 20		0.035	0.005K	0.01K	0.500	0.015		
73/07/25	12 20		0.115	0.069	0.02	0.960	0.034		
73/08/14	12 40		0.075	0.015	0.05	1.150	0.033		
73/09/27	13 30		0.155	0.009	0.01K	0.730	0.078		
74/02/03	12 15		0.080	0.015	0.4	0.400	0.035		
74/03/16	11 50		0.085	0.010	0.2	0.700	0.015		

__K VALUE KNOWN TO BE LESS THAN INDICATED __

15

STORET RETRIEVAL DATE 75/03/31

210401 LS2104D1
36 44 00.0 088 09 00.0
LEDBETTER CREEK (LEATHER CREEK)
21 7.5 MICO
T/KENTUCKY LAKE
HWY 90 BRDG APPROX 4 MI N OF PAXON KY
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/03/31	13 00		0.035	0.010	0.2	0.380	0.058		
73/05/06	13 05		0.015	0.007	0.3	0.150	0.067		
73/07/09	13 00		0.010	0.005K	0.1	0.110	0.021		
73/07/25	13 20		0.055	0.033	0.3	2.520	0.360		
73/08/14	13 30		0.075	0.030	0.3	1.100	0.115		
73/09/27	13 55		0.010	0.005K	0.1	0.790	0.075		
73/11/11	12 00		0.008	0.008	0.03	2.200	0.640		
73/12/11	11 39		0.016	0.016	0.05	1.150	0.052		
74/01/13	11 55		0.010	0.010	0.4	2.800	1.150		
74/02/03	13 00		0.015	0.010	0.3	0.600	0.020		
74/03/16	11 30			0.005	0.3	0.200	0.020		

K VALUE KNOWN TO BE LESS THAN INDICATED

SHEET RETRIEVAL DATE 75/03/31

2104E1 LS2104E1
36 33 00.0 088 10 00.0
BLOOD RIVER
21 7.5 NE= CONCORD
1/KENTUCKY LAKE
HWY 121 BRDG .5 MI W OF NE=CONCORD
11EPALES 2111204
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00610 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/03/31	13 45		0.060	0.013	0.2	0.460	0.061		
73/05/06	14 00		0.060	0.016	0.3	0.460	0.105		
73/07/09	14 15		0.040	0.008	0.2	0.520	0.069		
73/07/25	14 20		0.410	0.078	0.5	2.100	0.147		
73/08/14	14 20		0.410	0.075	0.4	2.500	0.154		
73/09/27	14 45		0.045	0.012	0.1	0.720	0.130		
73/11/11	12 40		0.025	0.010	0.1	1.400	0.098		
73/12/01	07 45		0.125	0.068	0.4	1.150	0.032		
74/01/13	12 30		0.025	0.020	0.4	2.700	1.150		
74/02/03	13 45			0.020	0.4	2.000	0.035		
74/03/16	13 45		0.105	0.010	0.3	0.600	0.030		

60.

STORET RETRIEVAL DATE 75/03/31

2104F1 47X3F1
36 25 00.0 088 08 00.0
EAGLE CREEK
21 7.5 BUCHANAN TN-
T/KENTUCKY LAKE
HWY 79 BRDG 3 MI W PARIS LANDING ST PARK
11ePALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	09	57	0.050	0.007	0.02	0.560	0.006		
73/05/10	10	20	0.040	0.013	0.1	0.440	0.031		
73/06/10	11	30	0.025	0.008	0.01K	0.440	0.016		
73/07/06	10	55	0.065	0.007	0.01K	0.660	0.014		
73/08/12	10	30	0.090	0.009	0.02	0.720	0.008		
73/09/08	10	20	0.050	0.005	0.1	0.730	0.310		
73/10/13	11	30	0.040	0.013	0.02	0.250	0.034		
73/11/10	11	35	0.015	0.009	0.01K	0.800	0.094		
73/12/01	10	50	0.065	0.008	0.1	0.200	0.020		
74/01/12	10	30	0.020	0.012	0.1	0.700	0.028		
74/02/02	10	25	0.055	0.010	0.2	0.400	0.015		
74/02/16	11	15	0.005K	0.005K	0.1	0.100	0.020		
74/03/02	10	45	0.025	0.005K	0.1	0.100	0.055		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

WQNET RETRIEVAL DATE 73/03/31

210461 47X361
36 18 00.0 088 08 30.0
WEST SANDY CREEK
21 7.5 W SANDY DIKE
T/KENTUCKY LAKE
PUMP STATION 1 MI N OLD SPRINGVILLE
11EPALES 211120
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	09	20	0.060	0.011	0.01K	1.050	0.017		
73/05/10	09	50	0.045	0.016	0.03	0.550	0.026		
73/06/10	10	45	0.040	0.008	0.01	1.360	0.028		
73/07/06	10	20	0.170	0.034	0.03	1.050	0.091		
73/08/12	10	55	0.290	0.056	0.5	0.960	0.100		
73/09/08	09	45	0.200	0.054	0.4	0.960	0.154		
73/10/13	11	05	0.180	0.05K	0.4	0.600	0.154		
73/11/10	11	15	0.065	0.015	0.1	0.650	0.024		
73/12/01	10	30	0.125		0.03	0.500	0.028		
74/01/12	10	05	0.090	0.024	0.2	0.800	0.046		
74/02/02	10	00	0.105	0.035	0.2	0.800	0.075		
74/02/16	10	40	0.090	0.015	0.1	0.500	0.020		
74/03/02	10	05	0.105	0.025	0.2	0.700	0.110		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

2104M1 47X3M1
36 14 00.0 088 06 00.0
BIG SANDY RIVER
21 7.5 BIG SANDY TN
T/KENTUCKY LAKE
HWY 69 BRDG OR PUMPIN STATION OR BOTH
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	09 00		0.047	0.009	0.1	1.380	0.029		
73/05/10	09 30		0.085	0.027	0.2	0.560	0.092		
73/06/10	10 30		0.075	0.025	0.1	0.720	0.034		
73/07/06	09 55		0.170	0.012	0.02	1.760	0.470		
73/08/12	09 30		0.100	0.008	0.01	1.150	0.160		
73/09/04	09 25		0.140	0.009	0.01K	1.780	0.063		
73/10/13	10 50		0.100	0.012	0.01K	0.850	0.028		
73/11/10	10 15		0.072	0.005	0.01K	1.650	0.180		
73/12/01	10 10		0.150	0.040	0.03	0.600	0.020		
74/01/12	09 50		0.130	0.024	0.2	0.800	0.036		
74/02/02	09 45		0.085	0.020	0.1	0.300	0.022		
74/02/16	10 20		0.055	0.010	0.1	0.400	0.025		
74/03/02	09 45		0.080	0.010	0.1	1.200	0.090		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

SHET RETRIEVAL DATE 75/03/31

210401 47X301
36 15 30.0 087 59 20.0
CHOCKEJ CHEEK
21 7.5 MCKINNON TN
T/KENTUCKY LAKE
RR BRDG OVERPASS 1 MI W OF PAXON TN
11EPALES 2111204
W 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	08 10		0.005K	0.005K	0.1	0.100K	0.005K		
73/05/10	09 05		0.008	0.006	0.1	0.100K	0.012		
73/06/10	10 00		0.005K	0.005K	0.2	0.100K	0.015		
73/07/04	09 20		0.010	0.005K	0.2	0.100K	0.042		
73/08/12	09 05		0.010	0.005K	0.2	0.660	0.140		
73/09/08	09 00		0.005K	0.005K	0.2	0.750	0.252		
73/10/13	10 25		0.010	0.006	0.2	0.100K	0.019		
73/11/10	09 50		0.005K	0.005K	0.1	0.400	0.130		
73/12/01	09 40		0.035	0.005K	0.6	0.100K	0.008		
73/12/04	12 10		0.010	0.005K	0.1	0.100	0.016		
74/01/12	09 30		0.009	0.008	0.4	0.400	0.016		
74/02/02	09 20		0.010	0.005K	0.2	0.100K	0.010		
74/02/16	09 55		0.005K	0.005K	0.3	0.100	0.010		
74/03/02	09 25		0.015	0.005K	0.2	0.300	0.030		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

2104K1 47X3K1
36 11 13.0 087 59 07.0
SULPHUR CREEK
21 7.5 HARMON CREEK
T/KENTUCKY LAKE
2NDRY RD BRDG NEAR 4HEATLEY CEMETERY
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	15	20	0.005K	0.005K	0.01K	0.935	0.010		
73/05/14	14	45	0.005K	0.005K	0.01	0.400	0.028		
73/06/14	11	53	0.010	0.008	0.1	1.600	0.050		
73/07/29	12	45	0.010	0.007	0.2	0.120	0.034		
73/12/09	11	50	0.008	0.008	0.1	0.100K	0.022		
74/02/02	13	20	0.005K	0.005K	0.1	0.100K	0.035		
74/02/27	13	00	0.015	0.005	0.1	0.500	0.025		
74/03/24	10	20			0.1	0.100K	0.030		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

2104L1 47X3L1
36 08 31.0 087 57 46.0
HARMON CREEK
21 7.5 HARMON CREEK
T/KENTUCKY LAKE
2NDRY RD BRDG NEAR HARMON CREEK CHURCH
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/14	14	30	0.005K	0.005K	0.1	1.980	0.056		
73/05/14	14	30	0.010	0.010	0.2	1.600	0.040		
73/06/14	12	15	0.010	0.007	0.3	0.780	0.048		
73/07/29	11	45	0.005K	0.005K	0.3	0.100K	0.020		
73/08/11	12	10	0.010	0.005K	0.3	0.200	0.125		
73/09/08	11	00	0.005K	0.005K	0.4	0.540	0.105		
73/10/13	10	50	0.010	0.009	0.3	0.400	0.360		
73/11/11	14	15	0.015	0.005K	0.1	0.100K	0.014		
73/12/09	11	30	0.008	0.008	0.5	0.200	0.020		
74/01/12	10	30	0.008	0.006	0.4	0.100K	0.012		
74/02/10	12	15	0.005	0.005	0.2	0.100K	0.015		
74/02/27	12	45	0.015	0.005	0.2	0.500	0.010		
74/03/28	10	05	0.005K	0.005K	0.2	0.100K	0.017		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

2104M1 47X3M1
36 04 30.0 088 02 30.0
BEAVEDAM CREEK
21 7.5 CAMDEN,TN
T/KENTUCKY LAKE
BRDG(ST RD 604312 MI W OF EVA
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/14	14 05		0.005K	0.005K	0.1	0.100K	0.013		
73/05/14	14 00		0.010	0.006	0.2	0.750	0.024		
73/06/14	12 40		0.022	0.008	0.2	0.250	0.013		
73/07/29	11 00		0.010	0.005K	0.3	0.110	0.032		
73/08/11	12 50		0.010	0.005K	0.2	1.050	0.132		
73/09/08	10 40		0.015	0.005K	0.2	0.820	0.210		
73/10/13	11 15		0.005K	0.005K	0.1	0.600	0.099		
73/11/11	14 00		0.005K	0.005K	0.05	0.400	0.018		
73/12/09	11 20		0.005K	0.005K	0.2	0.100K	0.012		
74/01/12	09 55		0.010	0.005K	0.3	0.100	0.016		
74/02/10	12 45		0.010	0.010	0.2	0.100K	0.005		
74/02/27	12 30		0.015	0.010	0.2	0.400	0.025		
74/03/28	09 50		0.005K	0.005K	0.1	0.300	0.040		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

RETRIEVAL DATE 75/03/31

2104N1 47X3N1
36 03 30.0 088 04 30.0
BURNSIDE CREEK
21 7.5 CAMDEN TN
T/KENTUCKY LAKE
MT 8043 5406 .2 MI E CITY LIMITS CAMDEN
11EMALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/14	14 00		0.010	0.005K	0.1	1.100	0.036		
73/05/14	13 50		0.015	0.005K	0.1	1.150	0.032		
73/06/14	12 45		0.055	0.011	0.1	1.610	0.220		
73/07/29	10 45		0.020	0.005K	0.1	0.320	0.100		
73/08/11	13 00		0.020	0.005K	0.02	0.270	0.048		
73/09/08	10 30		0.015	0.005K	0.1	1.050	0.240		
73/10/13	11 25		0.010	0.005K	0.1	1.100	0.490		
73/11/11	13 40		0.010	0.005K	0.02	0.250	0.019		
73/12/09	11 15		0.025	0.012	0.1	0.200	0.016		
74/01/12	09 45		0.020	0.008	0.3	0.400	0.028		
74/02/10	11 45		0.025	0.005K	0.2	0.400	0.025		
74/02/27	12 20		0.020	0.010	0.1	1.000	0.045		
74/03/28	09 45		0.010	0.005K	0.1	0.100	0.030		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

2104P1 47X3P1
36 03 00.0 088 04 30.0
CYPRESS CREEK
21 7.5 CAMDEN TN
TENNESSEE-KENTUCKY LAKE
1.5 SE CAMDEN OFF DIRT RD 100 YDS RT
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/14	13 20		0.115	0.044	0.1	0.440	0.200		
73/05/14	12 35		0.130	0.060	0.2	1.260	0.270		
73/06/14	13 00		0.180	0.140	0.3	0.960	0.180		
73/07/29	10 30		0.960	0.740	0.3	1.650	0.850		
73/08/11	13 25		0.825	0.580	0.8	1.680	0.700		
73/09/08	13 20		1.250	1.000	0.9	2.700	1.260		
73/10/13	11 40		1.160	0.900	0.9	3.500	1.900		
73/11/11	13 30		0.630	0.375	0.4	1.200	0.555		
73/12/09	10 50		0.150	0.120	0.3	0.500	0.192		
74/01/12	09 30		0.070	0.012	0.3	0.600	0.060		
74/02/10	11 30		0.130	0.040	0.3	0.400	0.120		
74/02/27	11 40		0.100	0.040	0.3	0.600	0.110		
74/03/28	12 00		0.105	0.045	0.2	0.400	0.135		

STORET RETRIEVAL DATE 75/03/31

210401 47X301
36 01 00.0 088 00 00.0
TENNESSEE RIVER
21 7.5 CAMDEN TN
I/KENTUCKY LAKE
RM BRDG BELO HWY 70
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS O-THO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/14	10 40		0.070	0.039	0.4	1.000	0.054		
73/05/14	11 50		0.065	0.032	0.5	1.040	0.056		
73/06/14	10 25		0.085	0.044	0.4	2.800	0.120		
73/08/11	12 20		0.055	0.036	0.3	0.390	0.021		
73/09/08	13 40		0.065	0.030	0.3	0.480	0.042		
73/10/13			0.090	0.050	0.4	0.275	0.046		
73/11/10	11 30		0.080	0.048	0.4	1.300	0.031		
73/12/08	13 30		0.110	0.068	0.4	1.200	0.052		
74/01/12	13 30		0.075	0.032	0.3	0.300	0.020		
74/02/10	11 00		0.210	0.065	0.6	0.500	0.070		
74/02/27	09 00		0.095	0.035	0.5	0.600	0.030		
74/03/29	09 45		0.075	0.040	0.6	0.300	0.060		

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STONET RETRIEVAL DATE 75/03/31

210HM1 47X3R1
36 03 00.0 087 55 30.0
TRACE CREEK
21 7.5 JOHNSONVILLE
TVA-KENTUCKY LAKE
DIST RD RNUG .25 MI N OF DENVER
11EMALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/14	10 20		0.040	0.004	0.2	1.320	0.021		
73/05/14	11 30		0.090	0.084	0.3	0.780	0.021		
73/06/14	10 05		0.125	0.115	0.3	0.230	0.010		
73/07/24	09 30		0.170	0.160	0.3	0.100<	0.014		
73/08/11	13 00		0.170	0.160	0.2	2.400	0.024		
73/09/08	13 05		0.190	0.173	0.2	0.330	0.018		
73/10/13			0.260	0.205	0.2	0.100<	0.024		
73/11/10	10 30		0.315	0.290	0.4	0.100<	0.012		
73/12/08	14 00		0.180	0.140	0.2	0.100<	0.012		
74/01/12	12 45		0.055	0.032	0.7	0.100<	0.018		
74/02/10	08 00		0.110	0.100	0.5	0.200	0.020		
74/02/27	09 55		0.115	0.070	0.6	0.600	0.020		
74/03/29	09 15		0.135	0.125	0.4	0.100	0.035		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

REPORT RETRIEVAL DATE '75/03/31

210451 47X351
36 09 00.0 087 52 00.0
LITTLE HIGHLAND CREEK
21 7.5 HALLS CR. TN
T/KENTUCKY LAKE
DIRT RD BRIDGE 7 MI NW OF HAVERLEY
11EHALES 211120
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/14	09	35	0.025	0.005K	0.01K	1.100	0.015		
73/05/14	09	45	0.010	0.005K	0.1	1.200	0.017		
73/06/14	09	35	0.015	0.012	0.2	1.700	0.061		
73/07/29	08	35	0.015	0.015	0.2	0.100K	0.044		
73/08/11	11	23	0.010	0.006	0.1	0.130	0.011		
73/09/08	09	50	0.018	0.016	0.2	0.230	0.017		
73/10/13			0.025	0.018	0.1	0.100K	0.011		
73/11/10	10	00	0.013	0.013	0.1	0.150	0.012		
73/12/08	12	45	0.020	0.012	0.6	0.100K	0.008		
74/01/12	11	00	0.010	0.009	0.6	0.300	0.020		
74/02/10	10	00	0.010	0.007	0.2	0.100K	0.007		
74/02/27	10	25	0.015	0.015	0.3	0.200	0.015		
74/03/29	08	45	0.005	0.005	0.2	0.100K	0.025		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

210411 47X3T1
36 10 00.0 087 51 00.0
BIG RICHLAND
21 7.5 HALLS CR, TN
T/KENTUCKY LAKE
DIRT RD 4MDG 1 N * OF TRINITY
11EPALES 2111204
6 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/14	09 00		0.005K	0.005K	0.02	0.690	0.017		
73/05/14	09 07		0.010	0.009	0.2	0.420	0.011		
73/06/14	09 12		0.015	0.010	0.2	0.110	0.010		
73/07/29	09 00		0.010	0.008	0.2	0.100K	0.014		
73/08/11	10 55		0.015	0.013	0.1	0.350	0.012		
73/09/08	10 10		0.010	0.010	0.1	1.980	0.040		
73/10/13			0.010		0.1	0.100K	0.01e		
73/11/10	09 30		0.015	0.015	0.1	0.150	0.008		
73/12/08	12 30		0.030	0.016	0.3	0.200	0.012		
74/01/12	09 30		0.020	0.012	0.3	0.200	0.016		
74/02/10	09 30		0.005	0.005	0.2	0.400	0.020		
74/02/27	10 45		0.020		0.3	0.700	0.032		
74/03/29	08 15		0.005	0.005	0.2	0.100K	0.020		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

210401 47X301
36 15 30.0 087 52 30.0
WHITEOAK CREEK
21 7.5 STEWART TN
T/KENTUCKY LAKE
WHITEOAK RD BRDG 6 MI S OF MCKINNON
11PALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	12 00		0.010	0.005K	0.01K	0.370	0.006		
73/05/10	12 30		0.010		0.1	0.100K	0.019		
73/06/10	13 00		0.015	0.009	0.2	0.170	0.035		
73/07/06	13 35		0.015	0.012	0.1	0.110	0.012		
73/08/12	12 00		0.020	0.011	0.1	0.200	0.016		
73/09/08	13 00		0.015	0.014	0.1	2.600	0.460		
73/10/13	12 55		0.020	0.017	0.1	0.450	0.014		
73/11/10	13 35		0.012	0.012	0.04	0.400	0.013		
73/12/01	12 37		0.035	0.012	0.6	0.500	0.00M		
74/01/12	12 00		0.040	0.012	0.4	0.100	0.005K		
74/02/02	11 40		0.005	0.005	0.2	0.200	0.015		
74/02/16	12 20		0.005K	0.005K	0.1	0.200	0.005K		
74/03/02	12 04		0.020	0.005	0.2	0.600	0.020		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

2104V1 47X3V1
36 19 00.0 087 54 30.0
CANE CREEK
21 7.5 MCKINNON
T/KENTUCKY LAKE
#WHITEOAK RD BRDG .3 MI S OFMCKINNON
11EMALES 2111204
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	11 45		0.010	0.005K	0.1	0.480	0.006		
73/05/10	12 05		0.025	0.010	0.1	0.110	0.037		
73/06/10	12 45		0.012	0.007	0.2	2.600	0.063		
73/07/06	13 15		0.015	0.009	0.1	0.120	0.016		
73/08/12	11 30		0.015	0.008	0.1	0.110	0.010		
73/09/08	11 40		0.010	0.010	0.1	0.440	0.086		
73/10/13	12 45		0.040	0.012	0.1	0.100K	0.020		
73/11/10	13 19		0.030	0.010	0.02	0.100K	0.007		
73/12/01	12 20		0.035		0.6	0.100K	0.008		
74/01/12	11 50		0.015	0.012	0.4	0.100	0.005K		
74/02/02	11 27		0.015	0.005	0.2	0.200	0.015		
74/02/16	12 10		0.005	0.005K	0.1	.100K	0.004K		
74/03/02	11 45		0.015	0.005K	0.1	0.800	0.055		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

RET RETRIEVAL DATE 75/03/31

2104#1 47X3#1
36 20 00.0 087 55 00.0
HURRICANE CREEK
21 7.5 MCKINNON TN
T/KENTUCKY LAKE
ST RD 6319 BRDG 2 MI N OF MCKINNON
11EMALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	11 30		0.005K	0.005K	0.01K	1.000	0.018		
73/05/10	11 55		0.005		0.1	0.100K	0.013		
73/06/10	12 30		0.010	0.007	0.1	0.110	0.007		
73/07/06	13 05		0.010	0.009	0.1	0.180	0.013		
73/08/12	11 35		0.015	0.009	0.1	0.100K	0.005K		
73/09/08	11 30		0.015	0.011	0.1	1.890	0.300		
73/10/13	12 35			0.013	0.1	0.100K	0.034		
73/11/10	13 10		0.035	0.010	0.02	1.000	0.064		
73/12/01	12 10		0.040	0.012	0.5	0.100K	0.005K		
74/01/12	11 40		0.020	0.012	0.4	0.300	0.008		
74/02/02	11 20		0.035	0.005	0.2	0.200	0.010		
74/02/16	12 04		0.010	0.005K	0.1	0.100K	0.005K		
74/03/02	11 35		0.015	0.005K	0.1	0.200	0.025		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

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STORET RETRIEVAL DATE 75/03/31

2104X1 47X3X1
36 23 00.0 087 54 00.0
LEATHERWOOD CREEK
21 7.5 STANDING ROC
T/KENTUCKY LAKE
ST RD 6319 BRDG 5 MI N OF MCKINNON
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/15	11 10		0.005K	0.005K	0.02	0.100K	0.005K		
73/05/10	11 40		0.010	0.010	0.1	3.600	0.060		
73/06/10	12 15		0.010	0.005K	0.1	0.100K	0.005K		
73/07/06	12 50		0.010	0.006	0.2	0.100K	0.010		
73/08/12	11 25		0.015	0.007	0.1	0.100K	0.005K		
73/09/08	11 20		0.010	0.009	0.1	3.000	0.330		
73/10/13	12 25		0.011	0.011	0.1	0.100K	0.025		
73/11/10	13 00		0.030	0.004	0.02	1.250	0.126		
73/12/01	12 00		0.030	0.004	0.5	0.200	0.006		
74/01/12	11 30		0.010	0.004	0.4	0.100	0.005K		
74/02/02	11 10		0.005K	0.005K	0.2	0.100K	0.015		
74/02/16	11 57		0.005K	0.005K	0.1	0.100K	0.005K		
74/03/02	11 24		0.010	0.005	0.1	0.500	0.050		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 73/03/31

21047Y1 47X3Y1
36 26 00.0 088 00 00.0
STANDING ROCK CREEK
21 7.5 STANDING ROC
T/RE-TUCKY LAKE
LIGHT HO [illegible] MI W OF MULBERRY HILL
11EPALES 2111204
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/04/18	10	50	0.010	0.005K	0.04	1.050	0.028		
73/05/10	11	15	0.060	0.012	0.2	4.000	0.025		
73/06/10	11	50	0.035	0.005K	0.1	2.310	0.100		
73/07/06	12	25	0.015	0.010	0.2	0.100K	0.013		
73/08/12	11	05	0.015	0.011	0.2	0.100K	0.005K		
73/09/08	10	55	0.015	0.013	0.1	3.400	0.252		
73/10/13	12	10		0.012	0.1	0.100K	0.012		
73/11/10	12	45	0.020	0.010	0.02	0.150	0.013		
73/12/01	11	40	0.045	0.016	0.5	0.100K	0.008		
74/01/12	11	15	0.020	0.012	0.5	0.700	0.008		
74/02/02	10	55	0.015	0.010	0.3	0.250	0.015		
74/02/16	11	35	0.005	0.005	0.2	0.100K	0.005		
74/03/02	11	13	0.020	0.010	0.1	0.300	0.030		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

210421
36 10 54.0 087 59 10.0
SULPHUR CREEK
21 7.5 HARMON CREEK
T/KENTUCKY LAKE
DRUG 0.4 MI S OF WHEATLEY CEMETERY
11FALES 211120
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/07/29	12 10		0.005K	0.005K	0.1	0.100K	0.028		
73/08/12	12 00		0.010	0.005K	0.2	0.250	0.063		
74/01/12	11 00		0.010	0.008	0.1	0.100K	0.012		
74/02/10	13 40		0.005K	0.005K	0.1	0.200	0.020		
74/02/27	13 05		0.015	0.010	0.1	0.200	0.020		
74/03/28	10 25		0.005K	0.005K	0.1	0.100K	0.032		

— K VALUE KNOWN TO BE LESS THAN INDICATED —

RUNET RETRIEVAL DATE 75/03/31

210421 AS210421 P005700
36 18 57.0 088 18 40.0
PARIS MAIN PLANT
21 HENRY CO HWY MAP
T/KENTUCKY LAKE
TOWN CREEK
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/07	11 00								
CP(T)-			1.900	1.400	3.4	9.900	3.250	2.000	1.700
73/06/07	16 00								
73/07/12	10 00								
CP(T)-			6.300	5.800	8.0	3.800	1.380	1.500	1.700
73/07/12	15 00								
73/08/09	10 00								
CP(T)-			4.200	4.100	4.0	10.500	5.100	1.400	1.500
73/08/09	14 00								
73/09/06	08 00								
CP(T)-					2.7	11.000		1.300	1.500
73/09/06	11 30								
73/10/04	08 00								
CP(T)-			4.500	3.700	0.2	18.000	11.000	1.400	1.300
73/10/04	13 00								
73/11/09	07 00								
CP(T)-			3.800	2.900	7.5	8.800	4.500	1.240	1.500
73/11/09	11 00								
73/12/06	10 00								
CP(T)-			2.600	1.800	0.4	14.000	5.500	1.400	1.400
73/12/06	14 00								
74/01/02	10 00								
CP(T)-			2.000	1.650	0.1	14.500	4.600	1.500	1.400
74/01/02	14 00								
74/02/06	10 00								
CP(T)-			1.450	1.100	0.4	7.700	2.160	1.400	1.500
74/02/06	14 00								
74/03/07	10 00								
CP(T)-			2.000	1.750	0.7	12.000	4.500	1.380	1.500
74/03/07	14 00								
74/04/04	10 00								
CP(T)-			2.700	2.100	0.7	9.800	3.600	1.400	1.500
74/04/04	14 00								
74/05/02	10 00								
CP(T)-			2.500	1.800	0.3	12.000	4.800	1.500	1.500
74/05/02	14 00								

80

STORET RETRIEVAL DATE 75/03/31

210431 PD210431
36 17 25.0 088 18 12.0
PARIS LAGOON #2
21 HENRY CO HWY MAP
T/KENTUCKY LAKE
BAILEY FORK CREEK
11EMALES 2141204
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/07	10 45		3.600	2.800	0.04	6.200	0.430	0.640	1.000
73/07/12	10 00		4.400	2.100	0.4	10.900	0.900	0.570	0.710
73/08/09	10 00		7.000	5.700	0.1	12.600	1.260	0.500	0.570
73/09/06	09 00				0.04	11.500		0.430	0.550
73/10/04	08 45		8.500	8.000	0.1	11.000	1.470	0.490	0.550
73/11/01	08 00		9.800	7.800	0.3	14.000	3.990	0.300	0.500
73/12/13	09 15		7.900	5.800	0.1	10.500	3.100	0.500	0.600
74/01/10	09 45		4.900	4.000	0.3	8.800	2.240	0.400	0.450
74/02/07	10 00		4.500	3.400	0.1	6.000	1.120	0.700	0.570
74/03/07	09 00		5.000	3.450	0.1	8.200	1.500	0.650	0.540
74/04/04	09 15		5.000	3.600	0.2	8.000	2.200	0.620	0.540
74/05/02	09 00		4.200	2.700	0.1	11.000	1.750	0.720	0.480

SHEET INTERVAL DATE 73/03/31

210432 PD210432 P0000940
36 17 30.0 088 17 05.0
PARIS LAGOON #3
21 HENRY CO MAP MAP
TYPE OF LAKE
BAILEY FORK CREEK
TIE-ALLEN 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/07	11 00		33.500	33.500	0.05	6.200	0.340	0.040	0.030
73/07/12	10 30		46.000	45.000	0.1	14.700	0.039	0.030	0.040
73/08/09	10 15		44.000	42.000	0.1	16.000	0.670	0.020	0.030
73/09/06	08 45				0.03	14.000		0.030	0.040
73/10/04	09 45		27.000	26.000	0.03	10.500	0.885	0.030	0.050
73/11/01	09 00		56.000	53.000	0.1	12.000	0.130	0.040	0.040
73/12/13	09 00		49.000	48.000	0.1	11.000	0.260	0.045	0.070
74/01/10	09 30		34.500	31.000	0.1	5.900	0.210	0.060	0.070
74/02/07	09 30		53.000	52.500	0.1	7.700	0.110	0.060	0.060
74/03/07	08 30		52.500	52.500	0.04	10.000	0.050K	0.040	0.040
74/04/04	08 45		63.000	52.000	0.1	11.000	0.050K	0.040	0.040
74/05/02	09 15		54.000	50.000	0.04	12.000	0.180	0.020	0.040

— K VALUE KNOWN TO BE LESS THAN INDICATED —

STORET RETRIEVAL DATE 75/03/31

210441 P0210441
36 16 22.0 088 19 10.0
PARIS LAGOON #5
21 HENRY CO MAY MAP
TRENTUCKY LAKE
CLIFTY CREEK
TENNESSEE 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00623 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/07	10 30		3.530	3.300	0.1	6.100	2.000	0.110	0.130
73/07/12	10 45		7.600	5.000	0.05	16.000	3.000	0.030	0.050
73/08/09	10 30		9.100	7.900	0.05	15.000	1.100	0.020	0.030
73/09/06	08 30				0.01	12.000		0.024	0.040
73/10/04	09 30		12.250	10.500	0.1	21.000	1.100	0.025	0.040
73/11/01	08 45		13.500	11.000	0.2	19.500	1.150	0.027	0.030
73/12/13	09 30		9.200	8.000	0.1	15.000	2.600	0.035	0.060
74/01/10	09 00		5.300	5.300	0.04	10.500	4.300	0.030	0.040
74/02/07	09 00		5.500	4.400	0.04	11.000	0.100	0.070	0.070
74/03/07	09 30		8.000	5.000	0.04	12.000	3.500	0.080	0.090
74/04/04	09 30		5.900	4.900	0.04	11.000	2.800	0.080	0.090
74/05/02	08 45		5.800	4.800	0.04	14.000	2.600	0.090	0.100

RETRIEVAL DATE, 76/03/31

210451 PD210451 P001200
39 00 50.0 087 57 50.0
NEA JOHNSONVILLE
21 7.5 JOHNSONVILLE
T/RED TUCKY LAKE
NORTH INDIAN CREEK
TENNESSEE 2141204
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/07	07 00		3.500	3.100	0.02	1.000	0.240	0.278	0.177
73/07/05	08 30		3.200	2.730	0.2	4.700	0.250	0.075	0.225
73/08/02	07 30		4.400	1.850	0.1	4.500	0.096	0.067	0.069
73/09/04	07 45			5.000	0.1	5.400	0.260	0.005	0.062
73/10/03	07 45		7.700	7.000	0.1	7.600	0.410	0.034	0.023
73/12/07	14 00		6.000	5.100	0.4	10.500	1.150	0.100	0.100
74/01/07	10 15		4.400	3.800	0.2	5.500	0.870	0.357	0.171
74/02/04	07 20		3.800	3.100	0.04	14.000	0.300	0.225	0.309
74/03/04	15 00		4.200	3.300	0.2	5.000	0.250	0.100	0.200
74/04/02	12 15		4.500	3.450	0.04	5.100	0.820	0.250	0.310
74/05/07	08 00		4.400	3.300	0.1	6.000	0.610	0.200	0.216
74/06/03			4.100	3.600	0.1	6.100	0.300	0.270	0.160
74/07/03	08 00		4.600	4.100	0.1	7.000	0.660	0.040	0.300

STORET RETRIEVAL DATE 75/03/31

21040A1 PD210461 P002060
38 02 58.0 086 14 27.0
PRINCETON
21 7.5 PRINCETON
T/KENTUCKY LAKE
CHERRY LAKE
ILLPALES 2141204
0000 FEET DEPTH

DATE END OF TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00625 NITROGEN TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50050 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/07	08 30		3.100	2.100	0.1	7.000	0.580	0.300	0.277
73/07/05	06 00		3.900	3.000	0.3	8.400	0.240	0.200	0.200
73/08/02	08 00		4.197	1.350	0.1	9.100	4.400	0.288	0.298
73/10/04	04 00		5.100	3.300	0.1	9.400	2.500	0.144	0.144
73/10/31	08 30		5.400	4.400	0.3	12.500	1.430	0.288	0.298
73/12/05	08 30		3.900	2.800	0.8	8.300	1.350	0.302	0.298
74/01/03	04 30		3.400	2.500	0.7	7.500	1.440	0.288	0.320
74/02/07	04 30		4.200	2.400	0.5	11.000	1.320	0.288	0.320
74/03/07	09 05		4.200	2.500	0.9	7.400	0.830	0.240	0.320
74/04/04	08 30		4.500	2.300	0.7	8.000	0.240	0.240	0.240
74/05/02	04 30		4.000	2.700	0.3	10.000	0.450	0.320	0.280
74/06/06	08 15		4.700	3.150	0.2	9.300	0.980	0.320	0.300
74/10/24	10 00		4.800	2.400	0.2	11.000	0.050	0.300	0.320

TOPET RETRIEVAL DATE 75/03/31

210471 TF210471 #002000
35 38 #0.0 088 06 25.0
PARSONS
21 DECATUR CO MAP
T/KENTUCKY LAKE
BEAR CREEK/BEECH CREEK
11EMILES 21#1204
0000 FEET DEPTH

DATE F-OF TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO3+NO2 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/06/12	11 00								
CP(T)-			6.900	#.500	0.4	8.700	2.700	0.291	0.320
73/06/12	16 00								
73/07/31	11 00								
CP(T)-			3.750	2.300	1.3	7.900	0.800	0.482	0.353
73/07/31	16 00								
73/08/30	11 00								
CP(T)-			4.000	7.400		10.200	1.000	0.240	0.320
73/08/30	16 00								
73/09/29	11 00								
CP(T)-			8.300	7.800	3.1	9.750	0.450	0.261	0.296
73/09/29	16 00								
73/10/31	11 00								
CP(T)-			7.450	4.200	2.2	10.000		0.388	0.326
73/10/31	16 00								
73/11/30	11 00								
CP(T)-			4.800	3.600	1.5	4.400	0.910	0.407	0.364
73/11/30	16 00								
74/01/30	11 00								
CP(T)-			3.750	1.760	1.0	3.200	0.830	0.387	0.420
74/01/30	16 00								
74/02/28	11 00								
CP(T)-			2.700	1.700	0.0	4.000	1.400	0.350	0.461
74/02/28	16 00								
74/03/30	11 00								
CP(T)-			4.100	2.500	0.2	6.200	0.820	0.305	0.367
74/03/30	16 00								
74/04/30	11 00								
CP(T)-			5.800	3.200	0.5	11.000	2.700	0.256	0.410
74/04/30	16 00								
74/05/31	11 00								
CP(T)-			3.750	2.800	0.5	8.000	1.550	0.344	0.340
74/05/31	16 00								
74/06/28	11 00								
CP(T)-			4.000	3.200	3.6	14.000	2.700	0.195	0.380
74/06/28	16 00								

STORET RETRIEVAL DATE 75/09/31

2104NA AS210NA P007308
36 05 10.0 087 48 45.0
TRACE CREEK
21 705 WAVERLY
T/KENTUCKY LANE
WAVERLY
HENDALES
4
2141204
0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	00671 PHOS-DIS ORTHO MG/L P	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/08/07	11 00								
CP(T)-									
73/08/07	16 00		5.200	5.200	5.4	1.100	0.135	0.400	0.400
73/08/27	11 30								
CP(T)-									
73/08/27	15 30		6.600	5.700		1.200	0.072	0.400	0.400
73/10/01	11 00								
CP(T)-									
73/10/01	16 00		8.800	0.230	4.2	1.600	0.110	0.500	
73/10/31	11 00								
CP(T)-									
73/10/31	15 30		7.600	7.100	3.9	1.100	0.160	0.500	
73/11/30	11 00								
CP(T)-									
73/11/30	16 00		3.370	2.900	3.9	0.630	0.067	0.500	0.500
74/01/28	11 00		2.050	1.900	2.2	0.700	0.078	0.500	0.500
74/02/28	11 00								
CP(T)-									
74/02/28	16 00		3.440	3.200	7.0	1.000K	0.100	0.500	
74/03/25	11 00								
CP(T)-									
74/03/25	16 00		3.450	3.100	5.1	1.000K	0.072	0.500	
74/04/29	11 00								
CP(T)-									
74/04/29	16 00		3.150	2.900	7.3	1.000K	0.150	0.500	0.500
74/06/27	11 00								
CP(T)-									
74/06/27	16 00		3.000	2.900	5.2	0.900	0.050K	0.500	
74/07/25	11 00								
CP(T)-									
74/07/25	16 00		5.500	5.300	9.2	1.000K	0.150	0.500	0.500

— K VALUE KNOWN TO BE LESS THAN INDICATED —

APPENDIX E

PARAMETRIC RANKINGS OF LAKES SAMPLED BY NES IN 1973

STATES OF KENTUCKY AND TENNESSEE

PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	600-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS P	INDEX NO
2101	LAKE CUMBERLAND	75 (3)	75 (3)	75 (3)	75 (3)	25 (0)	50 (2)	375
2102	DALE HOLLOW RESERVOIR	100 (4)	100 (4)	100 (4)	100 (4)	75 (3)	100 (4)	575
2103	HERRINGTON LAKE	0 (0)	0 (0)	50 (2)	0 (0)	25 (0)	0 (0)	75
2104	KENTUCKY LAKE	25 (1)	25 (1)	0 (0)	25 (1)	100 (4)	25 (1)	200
2105	BARKLEY RIVER RESERVOIR	50 (2)	50 (2)	25 (1)	50 (2)	25 (0)	75 (3)	275

ONE DATA TO BE USED IN RANKINGS

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	SSD-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS P
2101	LAKE CUMBERLAND	0.016	0.330	432.381	3.805	14.900	0.007
2102	DALE HOLLOW RESERVOIR	0.010	0.270	330.000	3.594	14.800	0.005
2103	HERRINGTON LAKE	0.079	0.550	442.667	14.908	14.900	0.047
2104	KENTUCKY LAKE	0.072	0.520	461.972	9.089	12.600	0.030
2105	BARREN RIVER RESERVOIR	0.027	0.460	452.594	6.216	14.900	0.006

LAKE DATA TO BE USED IN [illegible]

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG P	200- MEAN SEC	MEAN CHLORA	10- PER...	MEDIAN DISS ORTHO P
4701	LAKE BARKLEY	0.124	0.[illegible]0	473.331	12.723	10.[illegible]00	0.0[illegible]7
4704	BOONE RESERVOIR	0.052	0.[illegible]95	442.071	11.415	14.[illegible]00	0.[illegible]7
4706	CHEATHAM RESERVOIR	0.142	0.460	473.800	8.160	9.600	0.084
4707	CHEROKEE LAKE	0.051	0.780	448.667	12.162	15.000	0.022
4708	CHICKAMAUGA LAKE	0.031	0.440	463.833	3.111	9.600	0.012
4711	DOUGLAS LAKE	0.025	0.440	442.823	4.553	15.000	0.014
4712	FORT LOUDON RESERVOIR	0.054	0.550	465.571	4.776	12.600	0.025
4713	GREAT FALLS LAKE	0.020	0.405	444.417	3.983	14.800	0.007
4717	NICKAJACK RESERVOIR	0.051	0.495	459.833	2.742	9.700	0.025
4720	OLD HICKORY LAKE	0.058	0.330	469.769	8.931	9.400	0.019
4722	WATTS BAR RESERVOIR	0.032	0.510	462.250	5.550	11.000	0.012
4723	J. PERCY PRIEST RESERVOI	0.056	0.155	430.200	9.993	15.000	0.021
4724	TIM'S FORD RESERVOIR	0.021	0.445	398.167	6.739	14.900	0.009
4725	SOUTH HOLSTON LAKE	0.014	0.570	404.750	7.667	15.000	0.008
4727	REELFOOT LAKE	0.233	0.170	477.917	80.958	13.200	0.059
4728	WOODS RESERVOIR	0.017	0.320	429.083	7.392	15.000	0.005

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PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P	INDEX NO
4701	LAKE BARKLEY	13 (2)	40 (6)	13 (2)	7 (1)	73 (11)	13 (2)	159
4704	ROONE RESERVOIR	40 (6)	0 (0)	73 (11)	20 (3)	47 (7)	20 (3)	200
4706	CHEATHAM RESERVOIR	7 (1)	47 (7)	7 (1)	40 (6)	90 (13)	0 (0)	191
4707	CHEROKEE LAKE	50 (7)	7 (1)	53 (8)	13 (2)	13 (0)	40 (6)	176
4708	CHICKAMAUGA LAKE	67 (10)	63 (9)	33 (5)	93 (14)	90 (13)	70 (10)	416
4711	DOUGLAS LAKE	73 (11)	63 (9)	67 (10)	80 (12)	13 (0)	60 (9)	356
4712	FORT LOUDON RESERVOIR	33 (5)	20 (3)	27 (4)	73 (11)	60 (9)	27 (4)	240
4713	GREAT FALLS LAKE	87 (13)	73 (11)	60 (9)	87 (13)	40 (6)	93 (14)	440
4717	NICKAJACK RESERVOIR	50 (7)	33 (5)	47 (7)	100 (15)	80 (12)	33 (5)	343
4720	OLD HICKORY LAKE	20 (3)	80 (12)	20 (3)	33 (5)	100 (15)	53 (8)	306
4722	WATTS BAR RESERVOIR	60 (9)	27 (4)	40 (6)	67 (10)	67 (10)	70 (10)	331
4723	J. PERCY PRIEST RESERVOI	27 (4)	100 (15)	80 (12)	27 (4)	13 (0)	47 (7)	294
4724	TIM'S FORD RESERVOIR	80 (12)	53 (8)	100 (15)	60 (9)	33 (5)	80 (12)	406
4725	SOUTH HOLSTON LAKE	100 (15)	13 (2)	93 (14)	47 (7)	13 (0)	87 (13)	353
4727	REELFOOT LAKE	0 (0)	93 (14)	0 (0)	0 (0)	53 (8)	7 (1)	153
4728	WOODS RESERVOIR	93 (14)	87 (13)	87 (13)	53 (8)	13 (0)	100 (15)	433